2

Types of syntactic change

Introduction

Unlike the previous chapter, here the discussion will focus entirely on diachronic questions. Now that the notion of parametric change has been justified on empirical grounds, my goal here is to discuss a number of different kinds of syntactic change, and to show how the notion of parametric change can account for them. Thus my goal is to illustrate the power and utility of the parametric approach to syntactic change. The goal of the last chapter was to show that parametric variation was operative in the diachronic domain, i.e. that at least *some* examples of syntactic change can be analysed as parameter change. Here I want to show that *all* the major kinds of syntactic change involve parameter change. Thus the notion of parameter is not merely useful, it is pervasive; in fact, I wish to maintain that it is the principal explanatory mechanism in diachronic syntax. This is not to imply that non-parametric change does not exist; it does, and we will see an example of it in §2.3.

In Chapter 1 I worked with a rather rough-and-ready notion of parameter. In fact, I offered no general definition, still less a formal or technical one, of what a parameter might be. I will continue in this vein in this chapter, although the notion will be made slightly more precise. In Chapter 3 I will offer a more formal characterization. For present purposes, it is sufficient to work with a rather general and informal notion: a parameter is a dimension along which grammatical systems may vary.

In §2.1 I look at reanalysis, which has frequently been considered a mechanism of syntactic change (see Andersen (1973); Lightfoot (1979); Harris and Campbell (1995); Roberts (1993a)). Here I will try to show how, properly defined, reanalysis is forced by parameter change. §2.2 deals with grammaticalization, the development of new grammatical elements from other grammatical elements or 'full' lexical items. The phenomena will be discussed and illustrated, and the formal analysis summarized, following the main ideas put forward by Roberts and Roussou (1999; 2003). In §2.3 I turn to changes in argument structure; perhaps the best known case of this kind of change is the development of psychological predicates in the history of English. This will be summarized, and a partially parametric analysis discussed, developing and updating certain ideas in Lightfoot (1981); Fischer and van der Leek (1983); Kayne (1984); and in particular Allen (1995). In §2.4 I discuss changes in clausal complementation, taking the very well-known and extensive changes that can be observed in the development from Latin to Romance as the principal example (see Vincent (1988: 65–73) for a summary of these). Again, I will propose that these changes represent changes in parameter values. Finally, §2.5 picks up the discussion of word-order change from Chapter 1, and discusses word-order change in the history of English in some detail; this leads us to a more refined approach to the variation in word order than was described in §1.6.

2.1. Reanalysis

2.1.1. The nature of reanalysis

Harris and Campbell (1995: 50, 61) define **reanalysis** as 'a mechanism which changes the underlying structure of a syntactic pattern and which does not involve any modification of its surface manifestation', although they add that there can be a surface manifestation in the form of word-order

or morphological change, perhaps appearing after the reanalysis of underlying structure has taken place. What I want to show here is that reanalysis is intimately bound up with parameter change. In fact, reanalysis is usually a symptom of a change in the value of a parameter; given the central idea that parameters unify clusters of surface grammatical properties, this implies that a parameter change may manifest itself as a cluster of reanalyses, and a reanalysis is usually one symptom of a parameter change.

The idea that reanalysis is central to syntactic change is hardly novel. Harris and Campbell (1995: 16) show that it may go back as far as Aristotle and the Arabic grammatical tradition. Later (31–2), they give examples of the concept from the writings of Bopp (1816); Paul (1920); Brugmann (1925); and Wackernagel (1926–8). They also state (30) that reanalysis 'has been perhaps the single most important factor in modern treatments of syntactic change'. If we can relate reanalysis to parameter change, then, we will clearly be giving parameter change a central role in diachronic syntax.

In a sense, we have little choice other than to relate reanalysis to parameter change, given our general assumptions. Following Harris and Campbell's definition, reanalysis affects the structural representation associated with a surface string, without altering the string itself. The structural representation, given the assumptions made up to now, is built from three major operations: Merge, Move and Agree. Of these, Merge is the most fundamental operation, since it creates structure: we might think that it is invariant, as in fact was tacitly assumed when this operation was presented in the Introduction. (I return to this point in §2.5.) If so, then it cannot be open to reanalysis. Move and Agree are subject to parametric variation, as we saw in detail in Chapter 1. Hence parameters relating to these operations are what changes when reanalysis takes place. We will see examples of this below.

Beginning, it seems, with Paul (1920) (see Harris and Campbell's (1995: 31) discussion of his ideas), reanalysis has often been related to child-language acquisition. An important concept here is that of **abductive change**, as put forward, in the context of a discussion of phonological change in Czech, by Andersen (1973). Abduction was distinguished from induction and deduction by the philosopher Charles Sanders Pierce. Deduction proceeds from a law and a case to a result (for example, 'All men are mortal' (law); 'Socrates is a man' (case), therefore 'Socrates is mortal' (result)). Induction proceeds from a case and a result to a law (for example, an immortal being may observe that men (cases) eventually die

(result) and conclude that all men are mortal (law)). Abduction proceeds from a law and a result to a case. Abduction is open to error in a way that induction and deduction are not. With deduction, the case instantiates the law, and so the result must follow. With induction, the result is intrinsically associated with the case, and so the law follows. But abduction cannot follow necessarily: the connection between the case and the results known to follow from the law might be accidental. To take our example, from the statement 'x is mortal' (result) and the law that all men are mortal, one cannot conclude that x is human (case). It is easy to see that x could be a mortal non-human.

In part because of its logically flawed nature, the notion of abduction gives us a useful way of thinking about reanalysis in language acquisition. Following Andersen (1973: 767), we can schematize abductive change as follows:

(1) Generation 1: $G_1 \rightarrow Corpus_1$

   Generation 2: $G_2 \rightarrow Corpus_2$
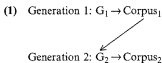
Here, 'Corpus' refers to a body of sentences produced by speakers. This is called an 'Output' by Andersen, and, in work on **learnability** it is called a 'text'; see the introduction to learnability theory in Bertolo (2001). 'G(rammar)' refers to an instantiation of UG with parameters set. Generation 1 (which we can think of, somewhat simplistically, as the 'parental' generation, the term 'generation' being intended in its everyday sense) has grammar G_1 which underlies $Corpus_1$. Generation 2's grammar (simplistically, the 'children's grammar'),[1] G_2, derives from $Corpus_1$ and Universal Grammar, given the assumptions about language acquisition we have adopted here (which were summarized in §1.1). The notion of abduction comes in here, since we can think of UG as the law, and $Corpus_1$ as the result: the child then abduces the case, i.e. a particular grammar. But, as illustrated above, the child may make an error of abduction, and, as it were, mistake a similar case (G_2) for the actual case, G_1. The important thing about language acquisition that the schema in (1) brings out is that there is no direct link between G_1 and G_2. This is because, in the last analysis, grammars are mental entities and it is impossible to have direct access to the contents of another mind. Grammars are only transmitted from one generation to the

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[1] In §4.2 we will see a reason to modify this simplistic terminology.

next via corpora, and corpora may give rise to errors of abduction. Still putting things rather simplistically, the possibility arises of 'mismatches' between G_1 and G_2 as a consequence of the way in which grammars are transmitted. The general view has been that reanalyses are just such mismatches. This has been widely regarded as the basic factor underlying change (see the discussion in Harris and Campbell (1995: 30–2, 61ff., and the references given there). To quote Kroch (2000: 699): '[l]anguage change is by definition a failure in the transmission across time of linguistic features'.

If syntactic change centrally involves reanalysis and if reanalyses are mismatches, and if reanalysis is symptomatic of parameter change, then it follows that parametric change is the basic factor underlying syntactic change. Moreover, if reanalysis is driven by abduction in language acquisition, then so is parameter change. So we arrive at one of the main ideas we will explore in this book (mainly in the next chapter): that parametric change is driven by language acquisition. As already stated, this idea is not new: it seems to have first been put forward by Hermann Paul, and has been argued for recently most notably by Lightfoot (1979; 1991; 1999).

This scenario for abductive change naturally raises two fundamental questions: What are 'mismatches'? and How can mismatches arise? Let us assume for the moment that 'mismatches' are reanalyses in exactly the sense defined by Harris and Campbell as given above, and that these must be linked to a parameter change; at the abstract level, mismatches must be connected to parametric options associated with the operations Move and Agree. Then we can see that Generation 2 may abduce some difference in underlying structure for some part of Corpus₁ as compared to Generation 1, and this may have some effect (in morphology or word order, as Harris and Campbell suggest) on Corpus₂; these effects are the overt signs of the parameter change.

Putting things this way brings out the problems with this approach. There are two principal problems, which we can call the Regress Problem and the Chicken-and-Egg Problem.[2] The Regress Problem can be put as

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[2] Croft (2003: 247) also refers to a 'Chicken-and-Egg Problem' in diachronic syntax. But his problem is different from the one I discuss below. Croft's problem is that reconstructed changes may be used to support hypotheses about typological change, while a postulated typological change may be supported by a reconstructed change. As Croft says: '[t]his appears to be a vicious circle.' As we will see below, however, the Chicken-and-Egg Problem for us relates to distinguishing causes and effects of change, which is a different matter.

follows: an innovation in Corpus$_2$ may be ascribable to a mismatch in G$_2$ (compared to G$_1$), but it must have been triggered by something in Corpus$_1$ – otherwise where did it come from? But if Corpus$_1$ could trigger this, then how could G$_1$ produce this property without itself having the innovative property? To quote Kroch (2000: 699–700) again:

Since, in an instance of syntactic change, the feature that learners fail to acquire is learnable in principle, having been part of the grammar of the language in the immediate past, the cause of the change must lie either in some change, perhaps subtle, in the character of the evidence available to the learner or in some difference in the learner, for example in the learner's age at acquisition, as in the case of change induced through second-language acquisition by adults in situations of language contact.

Here Kroch illustrates the problem and one possible solutions: either Corpus$_1$ is subtly changed so that G$_2$ is more readily abduced from it than G$_1$, or some external factor such as language contact is at work. There is no doubt that language contact plays an important role in many syntactic changes, and that it can provide a straightforward solution to the Regress Problem. This will be the subject matter of Chapter 5. But it seems that not all changes can be explained through contact, and where contact is not a causal factor, subtle changes in Corpus$_1$ seem to offer the only mode of explanation for change. These subtle changes may be caused by some extrasyntactic, but still intralinguistic, factor such as phonological or morphological change; we will see examples of this below.

If some change in Corpus$_1$ is responsible for reanalysis but is not itself the reanalysis, we face the Chicken-and-Egg Problem. If we observe two correlated changes, how can we know which caused the other? To put it another way, we might want to say that two innovations in Corpus$_2$ are due to a single mismatch in G$_2$ caused perhaps by a single feature of Corpus$_1$. This will solve the Regress Problem along the lines just sketched, for one of the innovations. But if Corpus$_1$ shows the two innovations, how do we know which is playing the causal role? How do we know which innovation is a cause and which an effect of the reanalysis? And, for whichever one we call the cause, we still have the Regress Problem. This problem can be observed in two different treatments of the causal role of reanalysis. On the one hand, Lightfoot (1979) proposes a series of different changes leading to accumulated opacity in the grammar, ultimately causing a reanalysis (we will see an example of this directly); on this view, the prior changes are not explained and are subject to the Regress Problem, although the reanalysis is explained. On the other hand, Timberlake (1977) and Harris and Campbell

(1995) propose that reanalysis causes a group of unrelated changes; this approach explains the changes but not the reanalysis (see Harris and Campbell (1995: 77)). Of course we are always free to assert that there is no causal relation between the two innovations, but in doing this we flout Occam's razor (by having more entities, i.e. underlying changes, than necessary) and have the Regress Problem twice over.[3]

2.1.2. The Transparency Principle

Lightfoot's (1979) Transparency Principle offered a way of dealing with these problems, as can be seen from his discussion of the development of English modal auxiliaries (can, must, may, will, shall, ought). Lightfoot argues that several changes affecting these items took place together in the sixteenth century.[4] These include the loss of the ability to take direct objects (or indeed any kind of complement other than an apparently bare VP, with ought a consistent exception in requiring a to-complement), and the loss of non-finite forms. (2) illustrates an early example of will with a direct object, and an example of an infinitival modal (konne, corresponding to NE can):

(2) a. Wultu kastles and kinedomes?
         Wilt thou castles and kingdoms?
         (c. 1225, Anon; Visser (1963–73,§549))
     b. I shall not konne answere.
         I shall not can answer.
         (1386, Chaucer; Roberts (1985: 22))

Moreover, after the loss of V-to-T movement (the change in parameter B discussed in §1.3.2), modals diverged syntactically from all the other verbs

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[3] Harris and Campbell (1995: 40–4) criticize Lightfoot's (1991: 166ff.) discussion of the differences between parametric changes and other kinds of changes in part because it does not solve the Chicken-and-Egg Problem. The criticisms are partly justified, but they apply to any approach involving reanalysis, as Harris and Campbell (77) acknowledge.

[4] Many authors have pointed out that Lightfoot's chronology seems to be incorrect, in that it is not clear that all these changes took place at the same time; see in particular Warner (1983; 1993). However, I present the development approximately as Lightfoot did, since it illustrates the general point regarding transparency and reanalysis that I wish to make here.

of English (except the aspectual auxiliaries *have* and *be*, and dummy *do*) in that they retained the earlier pattern of negation and inversion syntax, i.e. they precede clausal negation and are inverted over the subject in main-clause interrogatives. This is of course still the case in present-day English:

(3) a. I cannot speak Chinese.
     b. Can you speak Chinese?

This can be accounted for, consistently with the idea that parameter B changed value in the sixteenth century, if we assume that by the time this parameter changed, modals were merged in T rather than V. Hence, once the V-to-T parameter changed, the syntactic differences between modals and main verbs in negation and inversion emerge since main verbs no longer move to T, while modals are merged there. So we have the NE situation in which modals have 'T syntax' and main verbs have 'V syntax'.

According to Lightfoot (1979), the creation of a new class of modal auxiliaries was due to the accumulation of exception features – morphological, semantic, and syntactic – on the modal verbs, which made them 'opaque' as main verbs. The morphological exception feature was that the modals, by the sixteenth century, were the only surviving members of the class of OE 'preterit-present' verbs. These verbs are characterized by having 'a strong past tense with present meaning ... and a new weak past tense' (Mitchell and Robinson 1992: 52). By late ME, the consequence of this was that these were the only verbs in the language to lack a 3sg ending in the present tense (-*(e)s* or -*(e)th*); in a language with as impoverished an inflectional system as English, it is reasonable to suppose that this is a highly irregular feature. The semantic 'irregularity' of these verbs was their modal meaning, and in particular their ability to form a periphrastic substitute for the moribund subjunctive inflections. In virtue of their meaning, the usual form–meaning correlation between preterit morphology and past time did not always hold (for example, in *I should do it tomorrow*). One syntactic irregularity may have been that, with the glaring and unexplained exception of *ought*, the modals never took *to*-infinitives as their complement, although this was established as the main form of non-finite sentential complementation by the end of the ME period (Los 1998; Fischer *et al.* 2000: 211ff.); Lightfoot (1979: 101–9) is the original presentation of these and other opacity-inducing factors.

So, Lightfoot's claim is that the Transparency Principle forced the modals to change category once this opacity became too great. This approach

has two notable advantages. First, it narrows down the Regress Problem; as long as we know how much opacity can be tolerated and what the nature of opacity really is, we can know at which point Corpus$_1$ will have sufficient exception features to cause Generation 2 to abduce G$_2$ rather than G$_1$. More precisely, suppose the Transparency Principle states that a certain structure can only be acquired if it requires the postulation of less than n exception features. G$_1$ is acquired on this basis, but something in Corpus$_1$ must be abduced as a further exception feature, making G$_1$ unlearnable for Generation 2, and hence triggering reanalysis. We can see that the Regress Problem still appears in that there is some feature of Corpus$_1$ which must be an exception for Generation 2 but not for Generation 1. Similarly, a characterization of exception features would also solve the Chicken-and-Egg Problem; otherwise this arises in connection with exactly the same feature of Corpus$_1$, which is what is really driving the reanalysis. Nevertheless, the merit of the Transparency Principle is that it forces us to say that reanalysis is caused by one exception feature too many.

The problems with the Transparency Principle also emerge from this discussion. The most fundamental of these is that there is no definition of transparency or its converse, opacity. Without these notions, it is clear that the potential advantages relative to the Regress Problem or the Chicken-and-Egg Problem are not realizable. Unfortunately, Lightfoot (1979) offered no such definitions, and neither have any arisen in more recent work by Lightfoot or others. So we must conclude that the Transparency Principle does not offer true solutions to the Regress Problem and the Chicken-and-Egg Problem.

2.1.3. Phonology and reanalysis

One way to tackle both the Regress Problem and the Chicken-and-Egg Problem is to attribute the crucial factor leading to reanalysis to another part of the grammar, for example, phonology or morphology. An example where phonology plays a role is the development of the question particle *ti* in Colloquial French (see Harris (1978); Bennett (1979); Roberts (1993a: 222–4); Harris and Campbell (1995: 66); a similar development has taken place in the history of Occitan (Wheeler 1988: 272–3) and some varieties of Franco-Provençal Valdôtain (Roberts 1993b: 342ff.)). This element is a reanalysis of the epenthetic consonant /t/ and the 3sg masculine pronoun *il* in inversion contexts, roughly as follows:

(4) (Jean) a-t-il fait cela? → Jean a ti fait cela?
    (John) has he done that John has Q done that
    'Has John done that?'

This change, which in fact involves the reanalysis of subject–clitic inversion
and the loss of pronominal features associated with *il*, depends on the
ability to drop word-final /l/ after /i/ in colloquial French. The effects of it
can be seen where the preverbal subject is not 3sg masculine, as in:

(5) a. Elle t'écrit   ti souvent?
       she you-writes Q often
       'Does she write to you often?'
    b. On t'a   ti demandé ton adresse?
       one you-has Q asked   your address
       'Have you been asked for your address?'

Also, since the 'complex inversion' construction from which *ti* was rea-
lysed could not have an initial subject clitic (*Il habite-t-il Lyon?* 'he lives-he
in Lyon' = 'Does he live in Lyon?'; see Kayne (1983); Rizzi and Roberts
(1989) on this), the existence of examples with *il* in subject position is a
further indication of this reanalysis:

(6) Il habite ti Lyon?
    he lives   Q Lyon
    'Does he live in Lyon?'

For this reanalysis to take place, it suffices that Generation 1 produced an
inversion structure containing epenthetic /t/ and the pronoun *il*, with a
low-level phonological rule deleting word-final /l/. This gives rise to a
surface string containing the phonological sequence /ti/. By treating /ti/ as
a Q-marker, Generation 2 can analyse this string as containing no post-
verbal subject clitic (in the complex inversion construction, a preverbal
subject is present in any case), no /t/-epenthesis, and no /l/-deletion. Syn-
tactic opacity may play no role here; rather it is the indeterminacy of the
earlier form which makes it subject to reanalysis (although I will return to
this point directly). Both the Regress Problem and the Chicken-and-Egg
Problem are solved by appealing to the idea that the crucial causal factor
was the deletion of word-final /l/.[5]

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[5] Actually the problems are solved for syntax, but they may be shifted to the
phonology. If final /l/-deletion is a productive option, why is it not postulated by
Generation 2 in this case? Again, we do not fully understand why Generation 1
tolerates the earlier grammar and why Generation 2 innovates. See note 6.

Roberts (1993a: 155ff.) puts forward a general notion of Diachronic Reanalysis (DR) which is operative here. The reanalysis relating the two constructions in (4) is given in (7); (see Roberts 1993a: 222, although the structures proposed here are simpler in various respects) the *(-t-)* in (7a) is presumably not present in the syntactic structure, being an epenthetic consonant:[6]

(7) a. [$_{CP}$ Jean [$_{C}$ [$_{T}$ a] C] [$_{TP}$ (-t-) il [$_{VP}$ fait cela]]] >
    b. [$_{TP}$ Jean [$_{T}$ a] ti [$_{VP}$ fait cela]]

This change can be dated to the early seventeenth century (Roberts 1993a: 223–4). According to Roberts (155ff.), both structural ambiguity and structural simplicity are preconditions for a DR of this type in that (7b) is clearly a simpler structure than (7b). I will discuss various ways of characterizing structural simplicity in §3.4. Hence opacity does in fact play a role, in the guise of structural simplicity; the idea is that reanalysis is motivated by a general preference on the part of language acquirers to assign the simplest possible structural representations to the strings they hear (as part of Corpus$_1$). I will henceforth refer to this as the 'simplicity preference'.

Moreover, DR of the type illustrated in (7) is associated with parameter change. DRs are seen as the symptoms of parameter change. Here, the development of *ti* is associated with the loss of subject–clitic inversion in main-clause yes–no questions; to the extent that inversion involves T-to-C movement of the kind described in §1.3.1, and depends on what we might call the ability of the relevant type of C to trigger movement (see §2.5 for more on this), it is a property subject to parametric variation. Roberts (159) suggests that 'the notion DR may … prove to be epiphenomenal. All DRs may turn out to be instances of Parametric Change.'

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[6] See Roberts (1993a: 221), and the references given there, on the structural position of *ti*. It is clearly lower than the position of the finite auxiliary, which we are assuming to be T, but external to VP. It is possible that the phonological opacity concerns /*t*/-epenthesis rather than /l/-deletion. No morphological or phonological operation equivalent to /*t*/-epenthesis is found elsewhere in French, while final-consonant deletion is rife on most analyses (see Dell (1985); Tranel (1981); Pagliano (2003)). Moreover, the opacity of /*t*/-epenthesis would carry over to the many varieties (including Quebec French, as well as varieties of Occitan and Franco-Provençal) where the question particle appears to have arisen from the 2sg pronoun *tu*. I leave these complex and interesting questions aside here.

The approach to reanalysis which regards it as caused both by simplicity and ambiguity gives rise to an interesting angle on the Regress Problem: assuming that language acquirers (Generation 2 in (1)) will always prefer the simplest possible representation of the strings of Corpus₁, we have to look for what *prevented* the simpler analysis for Generation 1. In this case, we take this to be phonology; Generation 1 has an underlying /l/ in *il*, which is deleted by the /l/-deletion rule (see notes 5 and 6 for some provisos to this). Similarly, the Chicken-and-Egg Problem may be reduced to phonology; presumably some change in the underlying phonological form led Generation 2 to abandon the underlying /l/ in *il*, with the reanalysis as a direct consequence. From the point of view of syntax, then, the problems are solved, although they may resurface in accounting for the relevant phonological changes.

Lightfoot (1999: 216–17) critiques DRs for having no really useful role to play in an account of language change. Strictly speaking, this may be true; we have already seen that Roberts (1993a) suggests DRs may be epiphenomenal, and we are following that suggestion here. Lightfoot correctly states that DRs are to be regarded as relating grammatical representations of subsequent generations, but incorrectly points out that 'they occur where grammatical shifts have already taken place' (217). In fact, DRs are intended as an indication of how a potentially ambiguous string had one analysis at one period (Generation 1) and another at a later period (Generation 2). Their utility lies in bringing out the alleged role of simplicity and ambiguity in driving reanalysis.

We have seen that Lightfoot (1979) regards opacity as the principal cause of reanalysis, although he also mentions ambiguity (1979: 351). Timberlake (1977) and Harris and Campbell (1995: 70ff.) consider reanalysis to be a consequence of ambiguity. Finally, Roberts (1993a) regards reanalysis as driven by both factors, assuming that the preference for simplicity can be seen in terms of opacity of the earlier structure.

2.1.4. Expressing parameters

If we are to view reanalysis as always accompanying parameter change, i.e. as the structural manifestation of the change in the value of at least one parameter, then we have to consider how Corpus₁ in (1) succeeds or fails in triggering different values for a given parameter, i.e. in leading language

acquirers to set a given parameter to a given value. Lightfoot (1999) tackles this question, following Dresher (1999), by introducing the notion of **cue** for a parameter. See also Lightfoot (2006: 82ff.), where a number of examples of cues are given; the loss of V-to-T movement in ENE and the development of the modals and *do* are also discussed there (90–100). In a similar vein, Clark and Roberts (1993) introduced the concept of parameter expression. This can be defined as follows (this definition is from Roberts and Roussou (2003: 15)):

(8)   A substring of the input text S expresses a parameter p_i just in case a grammar must have p_i set to a definite value in order to assign a well-formed representation to S.

To give a simple example, a sentence like (9) (repeated from §1.2.1), expresses the positive value of the null-subject parameter, since this parameter must be given the positive value in order for the sentence to be grammatical:

(9)   Parla italiano.
      S/he speaks Italian.

The notion of 'trigger' (or, equivalently, cue) can be defined in terms of parameter expression, as follows:

(10)   A substring of the input text S is a trigger for parameter p_i if S expresses p_i.

Thus (9) is a trigger for (the positive value of) the null-subject parameter. Clearly, for Generation 2 to converge on the same grammar as Generation 1 in the scenario in (1), Corpus$_1$ must express all the parameters of UG.

We can begin to connect P-expression to reanalysis by introducing the following notions (again, originally from Clark and Roberts (1993), but slightly reformulated here):

(11)   a. P-ambiguity:
           A substring of the input text S is strongly P-ambiguous with respect to a parameter p_i just in case a grammar can have p_i set to either value and assign a well-formed representation to S.
       b. A strongly P-ambiguous string may express either value of p_i and therefore trigger either value of p_i.
       c. A weakly P-ambiguous string expresses neither value of p_i and therefore triggers neither value of p_i.

Strong P-ambiguity is arguably linked to reanalysis. We might suppose that reanalysis takes place given a class of strongly ambiguous strings in

relation to a particular parameter in a given corpus, and where a simpler representation is associated with one value rather than the other. In the example involving French interrogative *ti* given above, the relevant strings are rendered P-ambiguous with respect to subject–clitic inversion (T-to-C movement; the 'residual' version of the V2 parameter of §1.3.1.2) by the phonological option of /l/-deletion or selection of an underlying form lacking final /l/. Since the reanalysed structure is simpler than the earlier one (see (7) and the following discussion, as well as notes 5 and 6 on /t/-epenthesis), this is the preferred structure. So P-ambiguity and the simplicity preference are what drives reanalyses, seen as surface manifestations of parameter change.

We can give a more extended example of how this approach works with the loss of V-to-T movement (parameter B of Chapter 1) in ENE. As we saw in Chapter 1, examples like the following (repeated from (74)) indicate that V moves to T at this period:

(12) a. if I **gave not** this accompt to you
    'if I didn't give this account to you'
    (c1557: J. Cheke, Letter to Hoby; Görlach 1991: 223; Roberts 1999: 290)
  b. The Turkes ... **made anone redy** a grete ordonnaunce
    'The Turks ... soon prepared a great ordnance.'
    (c1482: Kaye, *The Delectable Newsse of the Glorious Victorye of the Rhodyans agaynst the Turkes*; Gray 1985: 23; Roberts 1993a: 253)

In terms of the notion of P-expression introduced above, we can say that examples like this express the positive value of the V-to-T parameter. On the other hand, at that time as at this, many very simple sentences, which must have been extremely prominent in the trigger experience, were P-ambiguous. A simple sentence such as *John walks* expresses either value of V-to-T, as illustrated by the two possible structures in (13), and is strongly P-ambiguous:

(13) a. John [$_T$ walks] [$_{VP}$ ... (walks) ...]
  b. John T [$_{VP}$ walks]

Furthermore, following the change in status of the modal auxiliaries and *do* (which appears to have taken place slightly earlier in the ENE period than the loss of V-to-T; see Roberts (1993a: 310ff.), Warner (1997: 382–3); and below), any simple sentence containing a finite auxiliary was weakly P-ambiguous regarding the V-to-T parameter, assuming the auxiliary was in T:

(14)   a. I may not speak.

  b. I do not speak.

So we see that there was much P-ambiguity regarding the V-to-T parameter in sixteenth-century English. However, this ambiguity existed, albeit in a slightly different form, in ME too. (14) was strongly P-ambiguous prior to reanalysis of modals and *do* as auxiliaries, since these elements were at that stage main verbs. In this connection, the fact that dummy *do* became an auxiliary at the same time as the modals (see Denison (1985) and Roberts (1993a: 295)) played a very important role. This is the case because in the sixteenth century *do* could appear in positive declaratives, as shown in (15) (both examples are from Shakespeare's *Richard III*, discussed in Barber (1976: 164)):

(15)   a. Where eyes did once inhabit.

  b. Thou didst receive the sacrament.

In fact, *do* could seemingly appear in any context, except where a modal was present. Thus, *do* was always available as an alternative to verb-movement. In particular, this meant that there was always a non-V-movement alternative to constructions like (12), which otherwise expressed the positive value of the V-to-T parameter.

  We still have to ask why it is that the P-ambiguity of examples like (13) and (14) only became crucial in the sixteenth century. In other words, what prevented this P-ambiguity from leading to a reanalysis of V-to-T movement structures prior to this time? One answer has to do with morphology. Southern varieties of English lost a large part of their verbal agreement morphology in the latter part of the 15th century.[7] For example, Gray (1985: 495ff.) gives shown in Table 2.1 agreement paradigms for the present

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[7] Northern varieties, notably including Older Scots (spoken and written in the Kingdom of Scotland in the fifteenth and sixteenth centuries – see Derrick McClure (1994)) had rather different paradigms from OE. By the sixteenth century, these paradigms were apparently invariant, although they were already subject to what may have been a precursor of the modern Northern Pronoun Rule, in that the agreement endings disappeared in certain persons where the subject was non-pronominal; see Roberts (1993a: 265ff.) and the references given there; C. Jones (1997) on Scots varieties from a synchronic and diachronic point of view; Henry (1995) on the variant of the Northern Pronoun Rule found in present-day Belfast English (a variety which derives from Older Scots); and Jonas (2002) on the present-day Shetland dialect of English.

Table 2.1 Verbal agreement inflection in
Middle English

1400	1500
cast-(e)	cast
cast-est	cast-est
cast-eth	cast-eth
cast-e(n)	cast-(e)
cast-e(n)	cast-(e)
cast-e(n)	cast-(e)

tense of the verb *cast* in East Midlands English at the beginning and end of
the fifteenth century.

Shortly after 1500, what remained of the plural agreement marking
was lost. This development is striking in that many authors have obser-
ved a correlation between the 'richness' of verbal agreement inflection and
the positive value of the V-to-T parameter, notably in a range of Scandi-
navian languages and dialects. Vikner (1997: 201) sums up the relation as
follows:

(16)   An SVO language has V-to-T movement if and only if person morphology
       is found in all tenses.

This generalization (and its precursors; see the very thorough discussion of
these in Vikner (1997)) has been criticized for being empirically too strong.
There appear to be a number of varieties in which verbal inflection has
disappeared or nearly disappeared, but which nevertheless continue to
show V-to-T movement. Two well-known cases are the Kronoby dialect
of Swedish (spoken in Finland) and the Norwegian dialect of Tromsø:

(17)   a. He va bra   et   an **tsööft** **int** bootsen.
          it was good that he bought   not   book-the
          'It was good that he didn't buy the book.'
          (Kronoby; Platzack and Holmberg 1989: 74)
       b. Vi va' bare tre støkka før det at han Nielsen **kom** **ikkje**.
          we were just three pieces for it that he Nielsen came not
          'There were only three of us because Nielsen didn't come.'
          (Tromsø Norwegian; cf. Vikner (1997: note 19, 211))

Here we see that the finite verb in the embedded clause precedes negation.
These examples are therefore equivalent to sixteenth-century English
examples like (14a), and are taken to indicate that V moves to T in these

varieties. However, these varieties have no subject-verb agreement at all (like the standard Mainland Scandinavian languages, which lack V-to-T movement). As Thráinsson (2003) points out, this indicates that a biconditional statement of the type in (15) cannot be right (see also Roberts (1993a: 267); Bobaljik (2002); Alexiadou and Fanselow (2002) on this and related matters).

Instead, following Roberts (1999: 292), we may think that morphological paradigms of certain types may express parameter values. For example, let us restate Vikner's generalization as follows:

(18)   If (finite) V is marked with person agreement in all simple tenses, this expresses
       a positive value for the V-to-T parameter.

Example (18) differs from Vikner's generalization in two important ways. First, it is a statement about the expression of a parameter, and thus ultimately about the trigger experience, rather than being a statement about something internal to UG. In other words, it represents 'a choice from among the surface cues from among the limited set of possibilities provided by Universal Grammar' in the words of Anderson (2002: 273), who criticizes approaches of the type put forward by Vikner in which morphology determines syntax. Second, it is a one-way implication; it allows for languages with a positive value of the V-to-T parameter but without verbal agreement inflection, just as has been observed in varieties such as Kronoby Swedish, and Tromsø Norwegian. Thráinsson (2003: 154) similarly proposes a one-way implicational relation between V-to-T movement and the relevant verbal agreement inflection. See also Bobaljik and Thráinsson (1998).

Example (18) applies to the past, too. So, as mentioned in note 7, Middle Scots had a seemingly invariant verbal agreement paradigm (with the complication mentioned there) and yet allowed V-to-T movement, as examples like the following show:

(19)   Quhy sing ye nocht, for shame!
       why sing you not, for shame
       (Anon. *The Unicornis Tale*; Gray 1985: 158; Roberts 1993a: 266)

So we can conclude that, prior to 1500 or shortly afterwards, verbal agreement inflection in Southern varieties of English expressed a positive value for the V-to-T parameter. Interestingly, there was a delay between the loss of agreement marking and the loss of V-to-T movement, in that verbal inflection is lost approximately seventy-five years before V-to-T movement.

Thráinsson (2003: 184–5) shows that, as far as can be ascertained, the same is true for the Mainland Scandinavian languages – notably standard Swedish and Danish – which have historically lost V-to-T movement and verbal agreement marking. All this is consistent with the one-way implicational statement in (18).

In fact, Warner (1997: 382–3) divides the chronology for the loss of V-to-T in English into four periods. In Period 1 (up to ca. 1500) T attracts V, due to its agreement morphology, as we have seen. In Period 2 (1500– roughly 1700) T loses the attraction property and variation ensues as data like (12) triggers V-to-T, but the evidence of modals and *do* in T does not favour this, being weakly P-ambiguous in relation to this parameter. In Period 3 (ca. 1700–50) V-to-T movement is no longer found, but there are lexical exceptions (mainly *know* and *doubt*) which continue to show the older pattern. Finally, in Period 4, from 1750 on, V-to-T movement of main verbs no longer occurs.

The shift from Period 1 to Period 2 is the crucial one in the present context. If this line of reasoning is correct, the loss of morphological expression of the V-to-T parameter created the strong P-ambiguity needed for a reanalysis of the following kind:

(20) [$_{TP}$ John [$_T$ walk-eth] ... [$_{VP}$ ... (V) ...]] >
      [$_{TP}$ John T ... [$_{VP}$ ... [$_V$ walks]]]

Following Warner, this reanalysis led to variation for a period, but favoured the innovative, structurally most economical grammar. The reanalysis manifests a change in the V-to-T parameter, which, as we saw in §1.3.1, is associated with a cluster of properties: main-verb inversion in questions, *V–adverb–object* order, V–*not* order, and possibly also pronominal object shift and transitive expletive constructions.

Postulating that the morphological expression of the parameter played a crucial role in preventing the earlier reanalysis effectively deals with the Regress Problem in this instance. Moreover, the relative chronology of the loss of verbal agreement morphology and the slightly later change in the parameter gives us a way of dealing with the Chicken-and-Egg Problem, assuming that the relative chronology indicates the causal relation. Nevertheless, we can ask whether these are really principled and general answers to the problems. In particular, this solution to the Regress Problem shifts it to morphology, rather as the answer proposed in the case of the development of French *ti* sketched above shifted it to the phonology.

Similarly, although the relative chronology gives us a clear indication of the causal relation between the loss of agreement morphology and the change in the V-to-T parameter, it raises the tricky question of the nature of the interim grammar: here the morphological expression of the V-to-T parameter is lost, and yet the positive value appears to remain for a generation or two at least. If Warner is right in saying that there was variation at this period, we may be able to appeal to mechanisms of ongoing change of the kind we will discuss in more detail in §4.1 and §4.2, in particular a version of Kroch's (1989) notion of competing grammars. But it is important to see that what we have just sketched above, while clearly indicating the relations among P-expression, reanalysis and parameter change, undoubtedly leaves important questions open.[8]

One currently spoken Scandinavian language appears to be undergoing the loss of V-to-T movement at present: Faroese has verbal morphology which may be compatible with V-to-T movement according to (17), although the actual incidence of V-to-T movement has been the subject of some controversy. Thráinsson (2003) gives an up-to-date survey of what has been said about Faroese in the recent syntactic literature. Thráinsson concludes that morphological reduction has led to variation among dialects, registers, and age groups regarding the incidence of V-to-T movement. In this respect, the situation is not unlike the one Warner suggested for Period 2 of ENE described above. Moreover, as we shall see in §4.2, we expect variation of this type as a change is ongoing; this lends support to the competing-grammars idea. Contemporary developments in Faroese may well be able to tell us a lot about what happened in sixteenth-century English.

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[8] One of these is the technical question of why morphological marking of agreement on V should be associated with attraction by T. In terms of the theory assumed here, basically that of Chomsky (2000; 2001), T and V Agree for tense features, in that T has interpretable tense features and the morphology on V encodes uninterpretable tense features. T has uninterpretable agreement features, but these can only be valued against DPs. Hence it is unclear why V should be attracted to T (i.e. why we should have Move and Agree holding between V and T) just when V has rich morphological marking of agreement. I will leave this technical point open here.

2.1.5. Reanalysis and the poverty of the stimulus

One final point before we leave the discussion of reanalysis. It may seem at first sight that the scenario for abductive reanalysis that we have described is actually inconsistent with the argument from the poverty of the stimulus, in that abductive reanalysis is precisely a case where children do not necessarily converge on the grammar underlying their trigger experience. This point becomes clear if we reconsider part of the quotation from Hauser, Chomsky, and Fitch (2002) given in §1.1:

A child is exposed to only a small proportion of the possible sentences in its language, thus limiting its database for constructing a more general version of that language in its own mind/brain. This point has logical implications for any system that attempts to acquire a natural language on the basis of limited data. It is immediately obvious that given a finite array of data, there are infinitely many theories consistent with it but inconsistent with one another. In the present case, there are in principle infinitely many target systems ... consistent with the data of experience, and unless the search space and acquisition mechanisms are constrained, selection among them is impossible ...

Under abductive reanalysis, the child does in fact construct for itself a system which is consistent with the data from its experience but which is not exactly consistent with that underlying the trigger experience, as we have seen. But the important thing is that the search space and the acquisition mechanisms are highly constrained, and so reanalyses, although possible and actually attested (if the view of syntactic change being sketched here is correct), do not vary 'wildly' over just any imaginable possibilities. Instead, they appear to be of a rather limited type: it has often been observed that syntactic changes fall into fairly well-defined patterns. (See Harris and Campbell (1995, Chapter 2) for an overview of various approaches to syntactic change.) In terms of the particular technical assumptions about syntactic structure we are adopting here, reanalysis only involves functional categories and only affects the operations of Move and Agree (i.e. not Merge) and may well be subject to further constraints. Thus reanalyses reflect the rather limited range of parametric options UG makes available. Furthermore, as we shall see in §4.1 and §4.2, acquirers can discern and reproduce variation and optionality in the primary linguistic data in their internalized grammars. For this reason, studying them may eventually shed light on an important aspect of linguistic theory.

2.1.6. Conclusion

In this section, I have introduced the central concept of reanalysis, largely following Harris and Campbell's (1995) definition. I have suggested that reanalysis is symptomatic of underlying parametric change, and that it results from the abductive nature of language acquisition. I identified two problems which have often been discussed in the literature, which I called the Regress Problem and the Chicken-and-Egg Problem. These problems were discussed in relation to examples of reanalysis from the literature, although they were not resolved in any general way. I will return to these matters in §3.2, where we will see that the Regress Problem falls under the more general logical problem of language change. In §3.3, where we discuss the nature of the trigger for parameter values in more detail, we will come back to the Chicken-and-Egg Problem.

Bearing all this in mind, we turn in the next section to a well-known and highly pervasive type of syntactic change: grammaticalization.

2.2. Grammaticalization

Grammaticalization can be defined as the process by which new grammatical morphemes are created. The term was first coined by Meillet (1912), although, as Harris and Campbell (1995: 19) point out, the notion certainly predates the introduction of the term; see Hopper and Traugott (2003: 19ff.) for a discussion of the history of the nineteenth-century antecedents of the concept. Over the past twenty years or so, grammaticalization has been the focus of much attention in the typological and functional literature on syntactic change. (See in particular C. Lehmann (1986; 1995); Heine and Reh (1984); Heine, Claudi, and Hünnemeyer (1991); Traugott and Heine (1991); Heine *et al.* (1993); Bybee, Perkins, and Pagliuca (1994); Hopper and Traugott (2003); and the compendium of cases of grammaticalization in Heine and Kuteva (2002).) Less attention has been paid to the phenomenon in more formal approaches to syntax, although Roberts and Roussou (1999; 2003); van Kemenade (2000); Wu (2000); Simpson and Wu (2001); Munaro (2005); Tremblay, Dupuis, and Dufresne (2005); and the papers in Batllori *et al.* (2005) are exceptions. Here I will focus on the formal approach to grammaticalization presented in Roberts and Roussou

(1999; 2003), as this clearly illustrates how the phenomenon may be reduced to reanalysis and associated parameter change.

In terms of the kind of theory of syntax being assumed here, in which many grammatical morphemes (complementizers, auxiliaries, determiners, etc.) are seen as exponents of functional categories, the idea that grammaticalization involves the creation of new grammatical morphemes implies that grammaticalization frequently involves the development of new exponents of functional categories. To the extent that functional categories are the locus of parametric change, i.e. able to trigger the cross-linguistically varying properties of Agree and Move, we can see how creating a new exponent of a functional head F may involve creating new parametric properties – triggering of Agree or Move – associated with F.

A frequently discussed example of grammaticalization involves the history of French negation (Jespersen 1917; Foulet 1990; Hock 1991; Déprez 1997; 1999). In §1.4, we saw how a number of what are now 'n-words' in Modern French developed from formerly positive expressions: *aucun* (formerly 'some', now 'no'), *rien* (formerly 'thing', now 'nothing') and *personne* (formerly 'person', now 'no-one'). We also mentioned that a crucial part of this change, the change of clausal *ne*'s Negation feature from an interpretable to an uninterpretable one, may have correlated in the seventeenth century with the development of the *ne . . . pas* pattern as the standard form of clausal negation, with *pas* bearing the interpretable Negation feature from that time on. What we did not discuss there is the origin of *pas*. This word comes from the noun meaning 'step', which still exists in contemporary French. It was grammaticalized as a negative marker at the relevant stage in the history of French.

The development of the two-part clausal negation is part of a series of changes first pointed out by Jespersen (1917) which have become known as Jespersen's Cycle. They can be illustrated for both French and English as follows:

(21) *Stage 1:*
    a. OE: ic **ne** secge
                     I neg say
    b. OF: jeo **ne** dis
                     I neg say

    Stage 2:
    a. ME: I **ne** seye **not**
                     I neg say NEG
    b. Standard French: je **ne** dis **pas**
                     I neg says NEG

Stage 3:
a. ENE: I say **not**
b. Colloquial French: je dis **pas**

As (21) shows, both French and English illustrate the 'cyclic' development
from a preverbal negative marker, to a combination of pre- and postverbal
marking, to a final stage where only the postverbal marking survives. Stage
3 represents ENE, and, as we have seen, English then developed a rather
different pattern of Negation involving the auxiliary *do*; this was linked to
the change in the V-to-T parameter which we discussed in the previous
section. Like many **grammaticalization cycles**, the changes in the form of
Negation illustrated in (21) are not strictly cyclic (see also Hopper and
Traugott (2003: 124)), but we can observe an interesting series of apparently
related changes. The transition from Stage 2 to Stage 3 may not be of great
interest from a syntactic point of view, since it appears to involve just the
loss of an unstressed element. On the other hand, the change from Stage 1 to
Stage 2 involves the grammaticalization of the negative element. Here I will
briefly summarize the development of the French negator *point*, as this is
described in Roberts and Roussou (2003: 149ff.). The reason for choosing
point rather than *pas* is that the development of this element is in certain
respects more interesting for our conception of grammaticalization than
that of *pas*; recall also that *point* remains an alternative form of sentential
Negation alongside *pas*, at least in rather literary varieties of French.

The negator *point* developed from a noun meaning 'point'; this noun was
borrowed into English, and survives in Modern French as a masculine
noun. The negator *point*, on the other hand, is not a noun in contemporary
French and lacks grammatical gender and other nominal features such as
number. This element occupies the same position as *pas*, i.e. it follows a
finite verb and precedes a non-finite verb (see §1.3.1); in fact, it is simply a
stylistic alternative to *pas* in the relevant registers of French:

(22) a. Jean   ne   mange point de chocolat.
        John   neg   eats   not   of chocolate
        'John does not eat chocolate.'
     b. ne   point embrasser Marie, ...
        Neg   not   to-kiss   Mary ...
        'not to kiss Mary ...'

In order to understand the change that converted *point* from a noun into a
clausal negator, we need to take a closer look at the internal structure of

DPs and at the development of the French article system. Let us suppose, following Bernstein (1991; 2001); Ritter (1991); Zamparelli (1995), among others, that the structural complement of D is not in fact NP, but rather a further functional category indicating Number, i.e. NumP, as shown in (23) (we briefly mentioned this possibility in §1.5):

(23)
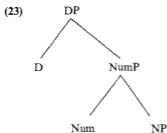
Furthermore, we can assume that the usual postnominal position of adnominal APs in both Old and Modern French is a reflex of the fact that nouns in general move to Num, with adnominal APs adjoined to NP (cf. Longobardi (2001: 579–80) and the references given there), as in:

(24)

'a noble kinght'
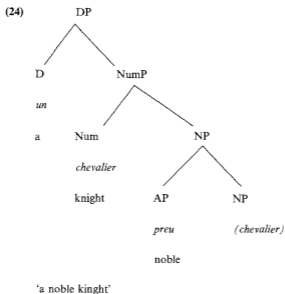
Num is also the position for certain quantifiers, as argued by Zamparelli (1995). In these terms, we can understand the development of a class of n-words in French (including *point*, but also *aucun, rien, personne*, etc.) as involving the loss of N-to-Num movement for these items and their reanalysis as exponents of Num. This can explain the change in distribution of these elements and the loss of phi-features; after the loss of N-to-Num movement these elements are no longer nouns and so, we may assume, they can no longer enter the relevant Agree relations with Num and D.[9]

How did this change take place? Here we follow Déprez's (1999) analysis. Déprez observes that Modern French DPs almost always require an article. In particular, sentences like (25) are ungrammatical if no article is present:

(25)   Jean a mangé *(des) pommes.
       John has eaten (some) apples.

Déprez further observes that this wasn't the case in earlier French. In OF, null Ds are found with singular mass nouns and with bare plurals, much as in English or in other Romance languages (see Longobardi (1994) on the latter point):

(26) a. Si mengierent **pain**   et   burent   **cervoise.**
         so they-ate   bread   and   drank   beer
         'So they ate bread and drank beer.'
         (*Gr.* 129, 1–3; Foulet 1990: 62)
      b. En me bourse grande a   il   **deniers**   a grant planté.
         in my purse   big   has there coins   in great plenty
         'In my big purse there is money in great plenty.'
         (*Av.* 203–4; Foulet 1990: 63)

We see then that French has lost a class of null indefinite determiners; these were replaced by the indefinite article *un(e)*, the 'partitive article' *du, de la, des* and, for generic plurals, the plural definite article *les*. In this connection, Déprez (1999: 416) points out that 'an attractive conjecture is that the use of bare *rien* and *personne* in environments from which bare NPs gradually disappeared, survived by … undergoing incorporation into the obsolete

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[9] Actually *aucun* turned into a D and so retained phi-features. D may be the only position in DP where phi-features are systematically marked in Modern French (Harris 1978: 74–5).

empty indefinite determiners which preceded them'. Roberts and Roussou (2003: 149ff.) develop Déprez's conjecture by supposing, following Longobardi (1994; 2001), that Ds give nominals their referential properties, i.e. their ability to refer to objects or sets of objects in the world. Once the OF null indefinite Ds were lost (which was presumably due to the extension of the use of the indefinite and 'partitive' articles; see Foulet (1990: 54ff.) on these developments), DPs with null Ds could no longer be referential. Words such as *rien*, *personne*, and *point*, as well as a small number of others including *chose* ('thing') and *âme* ('soul') (Foulet 1990: 275ff.), which for a time were also negative expressions, could remain in such DPs, but had to be interpreted as non-referential quantifiers occupying Num. The fact that Nouns like *rien* and *personne* denoted 'generic' entities ('thing', 'person') clearly helped in their reanalysis as quantifiers; in this respect *point* is rather different, being originally a Noun denoting a 'minimal quantity' (a 'minimizer' in the terminology of Bolinger (1972)), a point I return to directly.

This accounts for how these words ceased to be nouns, but it does not account for how they became negative (i.e. took on an interpretable Negative feature in terms of what was proposed in §1.4.2). Roberts and Roussou suggest that this change is bound up with the loss of null indefinite Ds in French, as mentioned above, along with the development of a null *negative* D in examples like (27) (see Kayne (1984: 48ff.) for an analysis of the DP bracketed in (27) as containing a null negative determiner):

(27) Jean n'a pas mangé [$_{DP}$ e de pommes]
      John neg-has not eaten   of apples
      'John has not eaten (any) apples.'

This is the only case of a null D in Modern French, and it is negative.[10] In OF, this construction did not exist; see the detailed discussion in Foulet

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[10] Except in indefinites with the 'partitive article' where the head Noun is premodified by an Adjective:

(i) a. J'ai acheté **du** pain.
        I've bought of-the bread
        'I've bought some bread.'
     b. J'ai acheté **de** bon pain.
        I've bought of good bread
        'I've bought some good bread.'

Kayne (1984: 79) suggests that this *de* is an article, rather than there being a null determiner or a quantifier.

(1990: 73ff., 264ff.). Instead, a singular negative indefinite typically lacked an overt article altogether:

(28) a. je ne nourriroie [DP trahitor].
　　　'I would not feed [a] traitor.'
　　　(*Ch.* 1223–4; Foulet 1990: 73)

　　b. [DP Offrande] hui mais n'i 　　 prenderai.
　　　offering 　　today 　more 　not-there 　I-will-take
　　　'I will take no more offerings today.'
　　　(*F.* 570; Foulet 1990: 59)

This construction is slightly different from that in (26) as it features singular count nouns in negative contexts, while in (26) we have mass or plural nouns in non-negative contexts. The article-less DPs in (28) are non-specific indefinites.

Roberts and Roussou follow Foulet (1990: 264ff.) in taking the development of the null negative D, associated with *de*, as being caused by the same reanalysis as that which created clausal *point*. (29a) is an example of *point* in a positive context (albeit an *if*-clause, and as such a context for negative-polarity items – §1.4.1) and (29b) is an example of *point* in a negative context. In both cases, it is followed by partitive *de*:

(29) a. Ja 　　por rien 　nel 　te 　deïsse
　　　already 　for 　nothing 　not-it 　you 　I-would-say
　　　se **point de ton bien** 　i 　veïsse.
　　　if 　bit 　of 　your 　goods 　there 　would-see
　　　'I would not tell you if I saw the smallest piece of your goods.'
　　　(*P.* 7261–3; Foulet 1990: 268)

　　b. cel aweule 　la 　qui 　n'a 　　**point d'argent** 　**ne de houce** 　ausi
　　　that blind-man 　there 　who 　not-has 　bit of money 　norof clothes 　too
　　　'that blind man who doesn't have a single bit of money nor clothes'
　　　(*Av.* 232–4; Foulet 1990: 266)

In the examples above, the verb is transitive, and *point* can be interpreted as the head of the direct-object DP taking a partitive PP-complement. Thus the relevant part of the structure of (29b) would be as follows:

(30) V[DP [D∅] [NumP [Num point] [NP (point) [PP d'argent …]]]]

In this structure, *point*, like *aucun*, *rien*, and *personne* as discussed above, is reanalysed as merged in Num when the loss of the null indefinite D meant that referential Nouns were no longer legitimate in determinerless DPs.

However, two things distinguish *point* from the other elements which were reanalysed from N to Num. The first is a semantic difference: *point*

lacks the descriptive content susceptible of being reinterpreted as a negative quantifier, i.e. it does not have the 'generic' meaning of words like *rien* and *personne*. Instead, it is a minimizer in Bolinger's sense. Second, *point* was able to be syntactically separate from the following *de*-phrase, as in (31):

(31)   De contredit n'i   avra   **point**.
       of opposition not-there will-have bit
       'There will not be a bit of opposition.'
       (*P.*, 494 and 3946; Foulet 1990: 265)

In examples like (31) the *de*-phrase satisfies the V2 constraint operative in OF (see §1.3.2).[11] The syntactic separability of *point* from the *de*-phrase combines with *point*'s lack of semantic content beyond 'pure' negation to create the circumstances for the reanalysis of *point* as a clausal negator, and thus the reanalysis of the DP headed by the null article as negative. This second reanalysis, which affected *point* but not *rien* and *personne*, can be schematized as follows:

(32)   a. ne V [DP [D $\emptyset$ non-specific] [NumP [Num point] [NP d'argent ...]]]>
       b. ne V [Neg point] [VP [DP $\emptyset$ negative d'argent]]

This is the origin of both the null negative determiner and the clausal negator *point*. The other clausal negators *pas* and dialectal *mie* (from the noun meaning 'crumb', another minimal quantity) underwent a similar reanalysis. As Foulet (1990: 269) points out, once expressions like *il n'y a pas d'argent* ('there is no money') arise, the development of the negative *de*-phrase is complete, since these are etymologically absurd, i.e. they could not mean 'there is not a step of money', although negative *pas* derives from a Noun meaning 'step'.

So we see how the development of the null negative Determiner is connected with the development of clausal negator *point*. The result of this development, combined with the loss of the null non-specific indefinite article of (28), is that null Ds were always inherently negative. Now, since *rien* and *personne* were the only Nouns able to appear with a null Determiner, they too became inherently negative. In terms of the analysis in § 1.4, they took on an interpretable Negative feature. In this way, all three developments – the development of clausal *point*, the development of the null negative D, and the development of *rien* and *personne* as n-words – are linked together by the loss of N-to-Num movement and the reanalysis in (32).

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[11]   Whether the fronted constituent *de contredit* here is a PP, an NP or a DP is not clear, but not crucial for the point at issue.

So we see that this case of grammaticalization involves reanalysis. The reanalysis was caused by the ambiguous expression of the interpretable Negative feature. In the older structure in (32a) the interpretable Negative feature is associated with *ne*, while in the innovative structure in (32b) an interpretable Negative feature is associated with both *point* and the null D of the object DP. The latter two items form a 'negative concord' relation, i.e. an Agree relation of the type discussed for Modern French in §1.4.1. It may be that this reanalysis led to Negative Agree relations in French, and thus changed the value of Parameter D of Chapter 1.[12] So grammaticalization can be seen as parameter change with associated reanalysis. The parameter change takes place when the P-expression is ambiguous and a reanalysis happens. Roberts and Roussou (2003) present a number of cases of the same type affecting the T-, C-, and D-systems; in each instance grammaticalization involves reanalysis triggered by ambiguous P-expression and associated reanalysis.

2.3. Argument structure

2.3.1. Thematic roles and grammatical functions

In this section I turn to changes in **argument structure**, the way in which the participants in the action or state of affairs described by a predicate are realized in the structure of the sentences containing that predicate. An important distinction to be made in this connection is that between semantic (or **thematic**) **roles** such as Agent, Patient, Recipient, etc., and grammatical functions such as subject, direct object, indirect object, etc.

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[12] However, it is difficult to be sure of the chronology in this case. We saw in §1.4.2 that *ne ... pas* became the obligatory form of negation in the seventeenth century. *Personne* became an n-word in the seventeenth century, and Brunot and Bruneau (1937), cited in Déprez (1999: 414), point out that the changes in the article system were not complete until that time. We may therefore tentatively continue to date the change as taking place at this period. It is quite likely that *ne* had an optionally interpretable Negative feature for some period, as mentioned in §1.4.2. See however Chapter 3, note 7, for some indication that this chronology may not be fully correct.

Following a standard view in generative grammar, I take thematic roles to be primitives associated with each verb[13] as a matter of lexical semantics (which is not to say that verbs do not fall into lexical classes; they do, as we shall see), and grammatical functions to be defined in terms of structural positions. Thus, the subject is the DP Specifier of TP and the direct object is the DP complement of V, for example. Although distinct, there is a relation between thematic roles and grammatical functions: for example, Agents are always subjects (in active clauses), although subjects need not always be Agents, as the subjects of stative verbs like *know*, *believe*, and *contain* show. The relation between thematic role and grammatical function is specified lexically for each verb.

As just mentioned, verbs fall into lexical subclasses. These can be defined in terms of the number of thematic roles they have and the way in which they distribute these. A thorough discussion of the verb classes of English can be found in Levin and Rappaport-Hovav (1995); here I will limit my attention to the one or two types which are relevant for the discussion of changes to follow. Traditional grammar recognizes a distinction between transitive and intransitive verbs (see Law (2003: 90) on the origin of this notion); the former are verbs with two thematic roles (for example, *eat*, *like*, *hit*) while the latter are verbs with just one (for example, *laugh*, *cough*, *fall*, *die*). There are also verbs with three thematic roles, such as *give*, *send*, *show*. Some of these verbs can appear in what is often called the 'double-object' construction as in *John sent Mary a letter* (see Chapter 1, note 9); we will be looking at one change that has affected this construction in the history of English below.

Recent linguistic theory has established a distinction between two types of intransitives: unergatives such as *laugh* and *sing*, and unaccusatives such as *fall* and *die* (see Perlmutter (1978); Burzio (1986)). In the former, the single argument of the verb is a true subject. (These verbs are usually agentive.) In the latter, the verb's argument is merged as an object, and moves to the subject position. There is much cross-linguistic evidence for this distinction, although in English the evidence is rather indirect. The clearest indication of unaccusativity in English lies in the availability of a deverbal adjective formed from the verb's participle: thus we have *a fallen leaf*, meaning 'a leaf which has fallen,' but not *a laughed man* (meaning 'a man who has laughed'); so we see that *fall* is an unaccusative verb and *laugh* is an unergative.

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[13] Actually all lexical categories assign thematic roles, but I restrict attention here to verbs as this is the richest category in terms of thematic structure, and also because the changes we will be looking at concern verbs.

The distinction between thematic roles and grammatical functions can be observed when we compare agentive transitives with so-called 'psychological' verbs (henceforth psych verbs), i.e. those which describe a psychological event or state. Consider the following pair of sentences:

(33)   a. John reads the newspaper.
       b. John likes the newspaper.

In both of these examples, *John* is the subject and *the newspaper* is the direct object. However, while in (33a) *John* is the Agent of the action described by *read* and *the newspaper* is the Patient of the action, in (33b) *John* has the thematic role of Experiencer, the person of whom the psychological state described by *like* holds, and *the newspaper* is what that state is about, the Theme.[14] Psych verbs, unlike action transitives, can in fact distribute their thematic roles 'the other way around', as it were, making the Theme the subject and the Experiencer the object: compare *the newspaper pleases/amuses/annoys/appals John* with (33b). This possibility gives rise to doublets of psych verbs which are very close in meaning but which distribute their thematic roles differently, such as *like/please*, *fear/frighten*, etc. Many languages have a third psych-verb construction in which the Theme is the subject and the Experiencer is marked like an indirect object. This construction is restricted to one verb in present-day English, *appeal* (as in *the newspaper appeals to John*), but is cross-linguistically common. The (near) loss of this construction is one important change in argument structure that we will look at below.

Argument structure can be manipulated by syntactic operations. The best known and probably most widespread such operation is the passive. In the passive of a transitive verb, the DP which corresponds to the direct object in an active sentence functions as the subject and the DP corresponding to the subject of an active sentence is either absent or appears in a *by*-phrase, as in *the newspaper is read (by John)*. Double-object verbs passivize the first object, which in fact corresponds to the notional indirect object, as the following examples illustrate:[15]

(34)   a. John sent Mary a letter.

[14] The terminology associated with thematic roles is notoriously varied. I will attempt to use the most neutral labels possible, and hence use 'Theme' here. Pesetsky (1994: 56ff.) argues that there are in fact various thematic roles associated with what I am calling the Theme argument of psych verbs.

[15] The '%' diacritic in front of (34e) indicates that the example is not acceptable in all dialects of English. Most American speakers reject examples of this type. They may be more natural in Northern varieties of British English than in Southern ones.

    b. John sent a letter to Mary.
    c. Mary was sent a letter (by John).
    d. A letter was sent to Mary (by John).
    e. %A letter was sent Mary (by John).

The passive in (34c) is known as the 'recipient passive'. This construction has changed in the recorded history of English, as we shall see below.

    I follow the standard assumption in taking both thematic roles and grammatical functions to be universal. Languages vary somewhat in how grammatical functions are morphosyntactically marked: the Modern English system relies primarily on word order, but many languages have morphological case marking on DP constituents (nouns, articles, and other DP-internal elements such as adnominal adjectives), which plays a major role in marking grammatical function; this was the situation in Latin and, to some degree, in OE. Still other languages may mark grammatical functions by means of agreement, and many languages combine these various methods. The pattern of case/agreement marking in relation to grammatical functions may also vary: in §4.1, we will look at the concept of ergativity (see Box 4.1). We take all of this to involve parametric variation (concerning the Agree and Move relations), retaining the view that grammatical functions are defined in structural terms however they are overtly marked.

2.3.2. Changes in English psych verbs and recipient passives

Where there is synchronic variation, there is diachronic change. The ways in which languages mark grammatical functions can change, as indeed they have done in the history of English and in the development from Latin to Modern Romance. Here I want to focus on two changes involving the marking of grammatical functions in the history of English. I will suggest that one of these changes, at least, is a parametric change associated with reanalysis. The other change may be of a different nature, being a change affecting the lexical properties of verbs, although the parametric change is also relevant to it. The first change concerns recipient passives and the second concerns psych constructions. Both have been much discussed in the recent literature on diachronic syntax: see Allen (1986; 1995); Anderson (1986); Denison (1990; 1993: 103ff.); Fischer and van der Leek (1983); Lightfoot (1979; 1991: 128ff.; 1999: 125ff.); the main traditional studies are van der Gaaf (1904) and Jespersen (1909–49, III). Much of the

following discussion is based on Allen (1995), which is the most thorough and authoritative study of these and other changes.

The first change affects recipient passives. (35) shows that in recipient passives in OE the subject of the passive retained its indirect-object marking, i.e. dative case:

(35) ac **him**   næs   getiðod ðære lytlan lisse.
      and him-Dat not-was granted the small favour-Gen
      'But he was not granted that small favour.'
      (*ÆCHom* I 23.330.29; Denison 1993: 108)

Here the other argument of 'grant', *ðære lytlan lisse*, is in the genitive case; I will return to this point below.

Concerning the second change, one class of psych constructions is illustrated in (36). This is the third type of psych construction described above – that where the Experiencer is marked as an indirect object. (36) shows that this construction was found in OE:

(36) hu **him**   se sige   gelicade
      how him-Dat the victory-Nom pleased
      'how the victory had pleased him'
      (*Or* 84.32; Denison 1993: 72)

Here the Experiencer, *him*, is in the dative case, the typical marking of an indirect object in OE (the accusative 3sg masculine pronoun was *hine* in OE). The Theme argument is in the nominative case, although it was not the subject; see Allen (1995) for extensive discussion on this point. The verb, translated as 'please' here, is *lician*, the ancestor of NE *like*. We observe that this verb has undergone a redistribution of its thematic roles (although not really a change in meaning, since the core meaning has involved causing pleasure all along), presumably associated with the loss of the construction in (35).

A further point that is relevant here is that certain two-argument verbs required their object to have some case other than the accusative. When passivized, the case of the active object is retained on the passive subject. This can be seen in the following example with the passive of 'help', a verb whose object is required to be dative:

(37) Ac **ðæm**   mæg beon suiðe hraðe geholpen from his lareowe.
      and that-Dat may be   very   quickly helped   by   his teacher
      'But that may be remedied very quickly by his teacher.'
      (*CP* 33.225.22; Fischer *et al.* 2000: 42)

The three constructions shown in (35)–(37) were all lost during the ME period. Since they all feature dative case, and English lost its morphological case system during the same period, it is tempting to relate these developments, as many authors have done. Aside from their intrinsic interest, this lends some importance to the discussion of these changes, as they may reflect some of the syntactic consequences of the loss of morphological case marking.

The NE counterparts to the OE constructions in (35)–(37) are as follows:

(38) a. How he liked the victory.

 b. But he was not granted that small favour.

 c. But that may be helped very quickly by his teacher.

Allen (1995) argues that the change affecting psych verbs was distinct from that affecting the passive constructions. Regarding the psych verbs, she says 'the loss of case distinctions did not make the "impersonal" constructions impossible, but contributed to the decline in frequency of these constructions which ultimately resulted in changes to the grammar which made them ungrammatical' (12). Regarding the passive constructions in (36) and (37), on the other hand, she states that these changes 'support the generative view that a syntactic change can be an essentially sudden reanalysis or change in parameter-settings which take place as a by-product of another change which removes ... the evidence available to language learners for the old analysis' (446). This contrasts with the 'lexically-implemented' change involving the loss of the psych construction (and the associated changes in the relation between thematic roles and grammatical functions in some verbs such as *like*).

The changes in the psych verbs were thus changes in lexical entries of individual verbs, which diffused through the lexicon over a considerable period. Allen (1995: 221ff.) argues that the beginnings of this change may be discerned in the optional assignment of 'lexical case' (for the moment this can be taken to mean dative case, see below) to the Experiencer arguments of certain verbs in OE (for example, *sceamian* 'to be ashamed'; Allen gives the full range of data in her Table 4.14, 137) and says that 'while the loss of morphological case distinctions will have exacerbated the tendency to treat Experiencers as nominative subjects (at least as an option), it did not create it' (287). The change was completed only by approximately 1500, in that the sixteenth-century examples of this

construction appear to be fixed expressions, the best known of which is *methinks*.

We are thus led to observe a non-parametric kind of change involving changes in lexical properties of verbs diffusing through the lexicon over a long period. I will defer a fuller discussion of implications of this point to §4.1. On the other hand, Allen says, the changes to the passive construction are candidates for treatment as parametric change. I will suggest that there was a parameter change and associated reanalysis involving the interpretable and uninterpretable case features associated with the DPs bearing thematic roles (the arguments) in these constructions. This parameter change was associated with a reanalysis caused by the loss of overt morphological case distinctions.

OE had a morphological case system in which nominative, accusative, dative, and genitive cases were distinguished. There was already some syncretism among case forms in OE, and Allen (1995: 158ff.) shows in detail that the system had broken down in all the ME dialects except Kentish by the end of the thirteenth century at the latest (see her Table 10.1, 441). Allen argues that this change directly caused the loss of indirect passives in the early thirteenth century: '[t]he indirect passives [i.e. the construction in (35) – IGR], disappear just at the time when this morphological distinction disappeared in most of the country and follows straightforwardly from the fact that there was no longer any evidence available to language-learners for two types of objects of monotransitive verbs' (446).

We can understand this change as a reanalysis and associated parameter change, but in order to see this, certain assumptions about case and arguments must be introduced. Generative theory postulates the existence of abstract Case (written with a capital 'C' to distinguish it from morphological case). Nominative and Accusative Case can be thought of as uninterpretable features associated with argument DPs which must be deleted under an Agree relation with features of a relevant head, subject to the usual conditions on Agree (see §1.4). Nominative Case is deleted under Agree with the φ-features of finite T, giving rise to subject-verb agreement in finite clauses. Accusative Case is similarly deleted under Agree with v, a verbal functional category which takes the lexical VP as its structural complement. Both the Probe and the Goal bear uninterpretable features in these instances. The φ and Case features in a simple transitive sentence (for example, *John loves Mary*) are thus as in (39):

(39)
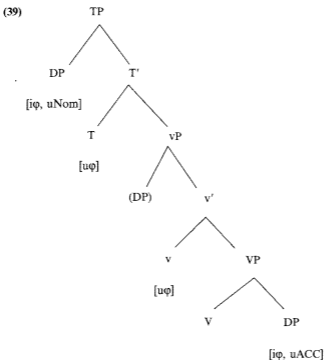
Here we have the Agree relations described in (40):

(40) a. v's [uφ] features Agree with those of the object, resulting in deletion of v's features and of DP's ACC feature;

b. T's [uφ] features Agree with those of the subject, resulting in deletion of T's φ-features and DP's NOM feature.

In addition, the subject DP raises to SpecTP. We will return to the mechanism which causes Move to happen in §2.5. For now, it is important to note that the subject is merged in SpecvP. From now on, I will adopt this version of the idea that the subject is merged in a predicate-internal position, rather than the idea that the subject is merged in SpecVP, which was discussed in §1.3.1. It is important to note that the Case/Agree relations here are purely structural, in that they are completely blind to the lexical properties of the verb.

Burzio (1986: 178) puts forward an important generalization regarding the nature of transitive clauses: Accusative Case is present if and only if the

verb assigns a subject thematic role. This idea has become known as Burzio's generalization. Assuming a category such as v makes it possible to locate the two properties related by Burzio's generalization on a single head. (I will refer to these as the 'Burzio properties' henceforth.) Let us suppose that v assigns the subject thematic role and, as just outlined, is responsible for deleting the uninterpretable Accusative feature of the direct object. Following Chomsky (2001:6), when v has this double property we write it as v*.

In unaccusative clauses, v is either defective or absent; either way, it lacks the 'Burzio properties' of Agreeing for Accusative Case and having a thematic subject merged in its specifier. I will assume for simplicity that v is simply absent in these cases. (This will be revised in §4.1.3.) Under these conditions, the object can be marked as Nominative and raises to the subject position:

(41) [TP John+NOM T[uφ] [VP arrived (John+NOM)]]

In passives, v also lacks the Burzio properties. This is what causes the object to be able to appear in the subject position, and the subject to be demoted:

(42) [TP John+NOM [T[uφ] was] [vP v [VP arrested (John+NOM)]]]

Presumably the passive morphology on the verbal participle plays a crucial role in determining the 'defective' nature of v here – see Baker, Johnson, and Roberts (1989) for more on this point; it is possible that the passive participle raises to v, although I will not indicate that here. (Collins (2005) develops a somewhat different analysis of passives.)

Now, let us suppose that languages with richer morphological case marking than NE, such as OE, make syntactic distinctions among the features which license the verb's arguments in addition to the simple Accusative vs. Nominative Case of NE.[16] As the OE evidence we have seen clearly shows, we need to allow for Dative arguments of V, i.e. an abstract Dative Case which corresponds to morphological dative case. (We also saw an example of a Genitive argument in (35); the same considerations apply here.) 'Inherent' Cases of this type are known to be directly associated with thematic roles in a way in which structural Nominative and

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[16] NE also has a Genitive Case, operative inside DPs, but I will leave that aside here and restrict the discussion to Case at the clausal level.

Accusative are not; the presence of these cases is determined by the lexical properties of the verb. Because of this, we can think of features such as abstract Dative Case (or DAT) as interpretable Case features, in other words as the morphological realization of a thematic role. As such, these Case features need not and cannot be deleted under Agree.

Now we are in a position to see what the parametric change was in thirteenth-century English. In OE and EME, as long as the morphological case distinctions were manifest, v Agreed with abstract Accusative Case, corresponding to morphological accusative case only: other arguments of V bore interpretable Case features which as such required no Agree. After the loss of morphological case distinctions, v's feature makeup changed in such a way that it Agreed with any and all non-subject arguments, i.e. its φ-features valued the Case feature of any available DP. This parametric change was associated with the reanalysis shown in (43):[17]

(43) $[_{CP}$ Him+DAT $[_{TP}[_{T}$ was$]$ $[_{vP}$ v $[_{VP}$ helped (him+DAT) $]]]]$ >
       $[_{TP}$ He+NOM $[_{T[u\varphi}$ was$]$ $[_{vP}$ v $[_{VP}$ helped (John+NOM) $]]]$

In the new structure in (43), the passive v has a different status, in that its ability to value Case on the object has been switched off, while in the old structure v had no such property to be switched off; this was a variety of impersonal passive in the sense that no internal argument needed to have its Case feature deleted as the only feature available was the interpretable DAT feature. The head v here is thus intransitive, as it is in unergative intransitives, or when the only complement of V is a PP or a CP. I attribute the cause of reanalysis to the loss of morphological case distinctions, exactly as stated by Allen (1995: 446): it 'follows straightforwardly from the fact that there was no longer any evidence available to language-learners for two types of objects of monotransitive verbs' (446). Once *him+DAT* could no longer be distinguished from *he+NOM*, the latter option was chosen and, by implication, v was taken to be 'personally passive' in this kind of example. This also led to subject agreement, since T has

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[17] Dative Experiencers could be subjects in OE and ME, as in Modern Icelandic (Sigurðsson 1989); Allen (1995: 50ff.) argues extensively that some preverbal datives in OE were subjects. On the other hand, Allen (1995: 143)) points out that 'although PDEs [preposed dative Experiencers – IGR] behaved like subjects, preposed dative Recipients in passive ditransitive constructions did not'. Accordingly, I treat the root category as CP here, with the Dative argument a topic in SpecCP (the internal argument of *help* is a Recipient, not an Experiencer, but this does not affect the syntax). See also Eythórsson and Barðdal (2005: 842–3).

↓ ...

taken on subject φ-features as a consequence of this change. In the older structure, T was 'impersonal', i.e. its φ-features bore the default 3sg values.

This change affected v's feature makeup, and as a parametric change had a number of consequences. The first was the loss of indirect passives. As Allen shows, this construction was lost in the early thirteenth century. Since v took on uninterpretable φ- features in all (transitive) clauses, a further consequence was the loss of all non-subject arguments which formerly bore inherent Case (either Genitive or Dative), i.e. all arguments in the c-command (and therefore the Agree) domain of v. Allen points out in connection with genitive-marked object arguments that 'we can say that in those dialects in which there is clear evidence of a dative/accusative distinction, genitive objects are still found, while in those dialects in which this distinction was lost, genitive objects are not found' (217). (She does go on to point out that genitive objects were in any case being replaced by accusative or prepositional objects from late OE onwards). Third, dative-marked subject arguments can survive; Allen (1995: 221ff.) argues that exactly this happened in the case of many psych verbs. A fourth and related point is that this development contributed to the loss or lexical reorganization of psych verbs. As we have seen, the changes in psych verbs were gradual, but the parametric change in v's properties ruled out a formerly available possibility for these verbs and so played a role in furthering the ongoing lexical changes.

Finally, the reanalysis in (43) affected recipient passives. However, Allen shows that the modern construction is not reliably attested before 1375, over a century after the parametric change just discussed. She comments 'the historical record does not support the notion of a *replacement* of the dative-fronted passive by the recipient passive ... Rather, the dative-fronted passive seems to have died out from the texts some time before the recipient passive was introduced' (447). There is, in fact, a period in the fourteenth century when neither construction is found. The parameter change we have proposed will account for the disappearance of the old, dative-fronted construction, since this contained a Dative argument in the c-command domain of v in the thirteenth century. But in itself it predicts nothing about the introduction of the modern-style recipient passive. In fact, the NE recipient passive requires two occurrences of v*, one associated with the subject thematic role and uninterpretable φ-features, and the other with the indirect-object thematic role and uninterpretable φ-features, as shown in (44) (on the motivation for this type of analysis of double-object constructions, see Larson (1988)):

(44)   [$_{TP}$ John [$_{v*P}$ (John) v* [uφ] [$_{VP}$ sent [$_{v*P}$ Mary+ACC v*[uφ] [$_{VP}$ V a

                              |_____| |_____

                              Agree

       letter+ACC]]]]]

       ____|

       Agree

Here the upper v*'s [uφ] features Agree with those of *Mary* and the lower
v's Agrees with the φ-features of *a letter*. In modern recipient passives, only
the upper v* is 'switched off' in the sense mentioned above:

(45)   [$_{TP}$ John [$_{T}$ was] [$_{VP}$ given [$_{v*P}$ t(John) v* [uφ] [$_{VP}$ V a book+ACC]]]]]

                                               |_____|

                                               Agree

The lag in the appearance of the modern-style recipient passives in the
fourteenth century identified by Allen may be attributable to some further
condition required for the innovation of this structure, perhaps connected to
the fact that it features two occurrences of v (cf. Allen's (1995: 448) comment
that this construction appears at the time when the relative order of the
indirect and direct objects becomes fixed in this construction).

    Finally, let us briefly reconsider the psych verbs. The reanalysis affecting
a verb such as *like* must have had the form in (46):

(46)   [$_{CP/TP}$ Him+DAT ... T[uφ] [$_{VP}$ (him) like pears+NOM]] >
       [$_{TP}$ He+NOM T[uφ] [$_{v*P}$ (he+NOM) v*[uφ] [$_{VP}$ likes pears+ACC]]]

Assuming that the OE psych construction was a kind of unaccusative (see
Belletti and Rizzi (1988) on this), there would be no vP in the structure. This
would have permitted T to Agree for NOM with the direct object, as shown
in the first line of (46). (Bejar (2002: 314, 317) proposes a similar analysis for
these constructions.) The reanalysis involves the introduction of v*P into
the structure, with its normal properties of being associated with a subject
argument in its Specifier and Agreeing with the VP-internal object. (Again,
Bejar (2002: 323, 325) proposes the same thing.) In line with Allen's (1995)
conclusions, as reported above, I take it that this reanalysis was facilitated,
but not caused, by the parameter change affecting the feature-content of v.

In conclusion, in this section we have looked at well-known examples of changes affecting both the realization of argument structure of psych verbs and changes in the functioning of the major grammatical-function changing operation, the passive. Largely thanks to Allen (1995), these changes are empirically quite well-documented. We have seen how a parameter change and associated reanalysis can account for many aspects of these changes, in line with the general approach being advocated in this chapter. As it affected the history of English, this change is usually thought of as an example of how the loss of morphological case marking may affect syntax and the lexicon. In the parametric analysis sketched above, this idea is directly reflected, in that v* is associated with φ-features in systems where the complements of the verb do not show morphological case distinctions. Where morphological case distinctions are found, v acts essentially as in intransitives, lacking these φ-features since the internal argument has an interpretable Case feature which does not require valuing.

The most important general conclusion from the above discussion is that we have observed the interaction of two kinds of change: a parameter change (the change in the feature content of v*) and a series of changes affecting the lexical entries of psych verbs which diffused through the lexicon over a long period. Although the parametric change influenced the lexical change, the two changes are in principle independent and operate in rather different ways.

2.4. Changes in complementation

In this section we are once again concerned with the nature of the arguments bearing thematic roles determined by verbs. However, the focus here is not on changes in how thematic roles are mapped onto the grammatical functions or on changes in grammatical-function changing operations such as passives, but rather on how the same argument in the same grammatical function may change status. Moreover, I will concentrate on arguments that express a proposition of some kind, and which are therefore typically realized as clausal constituents (mostly but not exclusively as CPs). So the main focus will be on how the propositional arguments associated with verbs like 'order', 'desire', 'say', etc. may change their syntactic properties, without changing either their thematic role (roughly Theme, in each of these cases) or their grammatical function (structurally the complement of the verb in each of these cases).

The particular example of changes in complementation I will look at here are those which distinguish the Romance languages as a whole from Latin. Given the range of languages and constructions to be discussed, the treatment will of necessity be rather coarse-grained. Nevertheless it is possible to observe some interesting diachronic processes at work, and once again we encounter reanalysis and, arguably, parametric change. The general conclusion will be that these notions are relevant to the diachrony of (clausal) complementation, as they are to the other diachronic processes discussed in this chapter.

Vincent (1988: 65–7) summarizes the clausal complementation system of Latin, presenting five main types of complement, as follows:

(47) a. *ut/ne* + subjunctive (verbs of ordering, desiring, warning, requesting, urging, fearing, etc.):[18]

Ubii   Caesarem   orant   ut   sibi   parcat.
ubii-Nom Caesar-Acc beg-3pl UT selves-Dat spare
'The Ubii beg Caesar to spare them.'

  b. (Bare) infinitive ('want', 'prefer', 'dare', 'try', 'begin', etc.):

Volo   vincere.
want-1sg to-win
'I want to win.'

  c. Accusative + infinitive ('verbs of saying, thinking, hoping, perceiving' (67)):

Dicit   te   errare.
says-3sg you(sg)-Acc to-go-wrong
'He says you are going wrong.'

  d. *Quod* (or *quia*) + indicative ('verbs of emotion where in a loose sense the complement can be said to express the cause or origin of the emotion' (67)):

Dolet   mihi   quod tu   nunc stomacharis.
pains-3sg me-Dat QUOD you(sg)-Nom now are-angry-2sg
'It pains me that/because you are angry now.'

  e. Indirect question ('any verb with the appropriate meaning' (67), marked by an initial wh-expression in the subordinate clause with the verb in the subjunctive):

[18] There is a further class of complements in *ut*, following mostly impersonal verbs expressing existence, non-existence or simple events:

(i) Accidit   ut   esset   luna   plena.
happened UT be-imperfect.subjunc-3sg moon full
'There happened to be a full moon.'
(*B.G.* 4, 29, I; Ernout and Thomas 1993: 304)

This *ut* is negated with *ut non* rather than *ne*. I will leave it aside in what follows; see Ernout and Thomas (1993: 303ff.).

> Ab   homine   quaesivi   quis   esset.
> from   man-Abl   asked-1sg   who   be-3sg-subjunc-imperf
> 'I asked the man who he was.'
> (Ernout and Thomas 1993: 313)

In most of the Romance languages, in particular French and (Standard) Italian, this system has changed quite drastically. This can be seen if we translate the above examples into French:

(48) a. Les ubii suppliunt César de les   épargner.
    the Ubii beg-3pl Caesar DE them spare
    'The Ubii beg Caesar to spare them.'

   b. Je veux   gagner.
     I   want to-win
     'I want to win.'

   c. Il/elle dit   que tu   te   trompes.
     s/he says-3sg that you(sg)-Nom you(sg)-Acc mistake
     'He says you are going wrong.'

   d. Ça me   fait   de la peine (parce)   que tu   es fâché maintenant.
     it me-Dat makes of the pain (because) that you(sg) are angry now
     'It pains me that/because you are angry now.'

   e. J'ai   demandé à l'homme qui il   était.
     I have asked   to the man who he was-imperf
     'I asked the man who he was.'

The changes can be summarized as follows (see Vincent (1988: 68)):[19]

a. loss of *ut/ne* + subjunctive;

b. restriction in distribution of the bare infinitive;

c. loss of accusative + infinitive;

d. the spread of *quod*-clauses into former (c) environments;

e. no change (except that mood of lower clause may now be indicative) in wh-clauses.

The different changes illustrate a variety of patterns of loss, restriction, spread and, in the case of (e), (near) stability. Let us look at the changes more closely and see whether we can see any more general patterns.

   a. In the Modern Romance languages, the Latin *ut* + subjunctive construction has completely disappeared and has been replaced by 'prepositional infinitives', i.e. infinitival clauses introduced by a complementizer

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[19] Vincent adds the development of the causative construction from *facere* ('do/make') + infinitive. I will leave this construction aside here, since it arguably also involves changes in grammatical functions.

derived from a preposition, *a/à* or *di/de*. Prepositions frequently gramma-
ticalize as complementizers; this kind of development is discussed in Has-
pelmath (1989), Hopper and Traugott (2003: 188–90), Roberts and
Roussou (2003: 97ff.) and the references given there. It seems quite reason-
able to treat *ut* and *ne* as complementizers in Latin, members of category C
heading the CP complement of the relevant classes of verbs. Modern
Romance *a/à* and *di/de* clauses are usually treated as CPs (see for example,
M. Jones (1996: 59), and see Kayne (2000: 282ff.) for a very different view),
and we can take *a/à* and *di/de* to be complementizers. In that case, the
change that has taken place here seems to involve one type of CP (non-
finite, introduced by a grammaticalized preposition) replacing another
(finite, introduced by a particle). It is important to bear in mind that
'replacement' does not imply 'reanalysis' here; it is not clear whether or
when the infinitival constructions replaced the *ut* ones, although there is
some evidence for complementizer *a* in Vulgar Latin (Gamillscheg (1957:
462), cited in Hopper and Traugott (2003: 189)).

    b. The change affecting bare infinitives also involves prepositional infini-
tives. The latter have replaced bare infinitives in various contexts, notably
object control, i.e. cases where the reading of the understood subject of the
infinitive is determined by the object of the main verb. In Latin, this
construction could involve bare infinitives, but in Modern French and
Italian a preposition is always required in these cases:

(49) a. Ab   opere ...   legatos discedere   vetuerat.
        from work-Abl legates move-away had-forbidden-3sg
        'He had forbidden the legates to move away from the work.'
        (Caesar, *B.G.* 2, 20, 3; Ernout and Thomas 1993: 329)
    b. Il avait défendu aux légats **de** s'éloigner   des   travaux.
        he had forbidden to-the legates DE selves-distance from-the works
        'He had forbidden the legates to move away from the work.'
        (Ernout and Thomas' (1993: 329) translation of (47a))

Similarly, a number of the **subject-control** verbs (i.e. verbs with infinitival
complements whose implicit subject is understood as corresponding to the
main-clause subject) listed by Ernout and Thomas (1993: 328) require a
prepositional infinitive in Modern Romance, for example, *studeo* ('be
eager'), *postulo* ('claim'). In fact, the verbs which take a bare infinitival
complement in Modern Romance fall into rather restricted classes: 'semi-
auxiliary' verbs (for example, *vouloir* ('want'), *pouvoir* ('can'), the causa-
tives *faire* ('do/make') and *laisser* ('let'), perception verbs such as *voir*

('see'), *entendre* ('hear'), and some impersonals such as *falloir* ('be necessary'). In all of these cases, it is likely that the complement clause is somehow reduced, i.e. not a CP but perhaps a TP or vP. (See Wurmbrand (2001) for an exploration of a variant of this idea.)

One important class of verbs with a propositional bare-infinitive complement in Modern French is the so-called 'cognitive verbs', which express 'belief or the communication of belief' (M. Jones 1996: 414). These in fact correspond to the Latin accusative + infinitive construction, where the subject of the infinitive was overt and marked accusative, unlike in French, where the subject is understood and 'controlled' by the main-clause subject:

(50) a. Te   abisse   hodie hinc negas?
        you(sg)-Acc go-away-past-infin today here deny-2sg-pres
        'Do you deny that you left here today?'
        (Vincent 1988: 70)

    b. Est-ce que tu nies être parti   d'ici   aujourd'hui?
        is it that you deny to-be left from-here today
        'Do you deny that you left here today?'

It seems that this construction derives from the earlier accusative + infinitive construction, which in these cases was replaced by a bare-infinitive construction with subject control.

c. The Latin accusative + infinitive construction has disappeared with propositional complements of the type illustrated in (47c) in Romance.[20] This construction appears to resemble the English construction in (51), although in Latin it is found in the complement of a wider range of verbs:

(51) I believe him to be mistaken.

In the construction in (51) the Accusative Case of the subject of the infinitival clause depends on the verb (or, more precisely, v* – see the previous section) of the main clause. The clearest way to see this is by passivizing the main verb, in which case the subject of the infinitive becomes the subject of the main clause:

(52) He is believed to be mistaken.

This is what we expect if the Case of the infinitival subject depends on the main-clause v*. Under passivization, as we saw in the previous section, v*

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[20] It survives with perception verbs and causative *laisser*. Here again, though, it is not clear that the complement is a full CP. In any case, it arguably denotes an event rather than a proposition, as argued by Guasti (1991: 36ff, 120ff.).

is rendered 'defective' and as such unable to Agree with φ-features on any category in its c-command domain. The subject of the infinitive can thus not be Accusative; instead, it Agrees for Nominative with the main-clause finite T (and moves to the main-clause subject position).

In Latin, it seems we can find the same pattern as in English (51) and (52). In particular, we find examples where the main verb is passivized and the subject of the infinitive appears in the nominative case:

(53) a. Galli   dicuntur   in Italiam transisse.
        Gauls-Nom say-passive-3pl in Italy-Acc to-have-crossed
        'The Gauls are said to have crossed into Italy.'
        (Ernout and Thomas 1993: 327)
     b. Traditur   Homerus   caecus   fuisse.
        report-passive-3sg Homer-Nom blind-Nom to-have-been
        'Homer is reported to have been blind.'
        (Vincent 1988: 67)

We can thus analyse these examples along the same lines as the English one in (52). This implies that in the active accusative + infinitive constructions the Accusative Case of the subject of the infinitive Agrees with v* of the main clause. (This construction is usually analysed as a TP rather than a CP complement in English (for example, in Chomsky (2001: 8)); below I will suggest that both the Latin and the English constructions are CPs, following Kayne (1984)).

However, the possibility illustrated in (53) was restricted to a subclass of the verbs of saying. (Woodcock (1959: 22) gives an indication of which authors used which verbs in this construction.) The apparently more productive option features the subject of the infinitive in the Latin construction in the accusative independently of the main clause. This evidence for this is summarized in Bolkestein (1979). First, alongside examples like (53), we find examples where the main verb is passive and yet the subject of the complement infinitive is nevertheless accusative:

(54) Dicitur   Gallos   in Italiam transisse.
     say-passive-3sg Gauls-Acc in Italy-Acc to-have-crossed
     'It is said that the Gauls have crossed into Italy.'
     (Ernout and Thomas 1993: 327)

Second, accusative + infinitive clauses are found as complements to Nouns, which is impossible with the nominal equivalents of English verbs which appear in the accusative + infinitive construction:

(55) a. *the belief (of) him to be mistaken
     b. nuntius oppidum   teneri
        message town-Acc   to-be-held
        'the message that the town was being held'
        (Bolkestein 1979: 31)

Third, many verbs which appear in the accusative + infinitive construction
do not otherwise have an Accusative object. This is true of *dicere* ('to say'),
as is shown in (56):

(56) a. Dico te   venisse.
        I-say you-Acc   come-perf-infin
        'I say that you have come.'
     b. *Dico te.
        I-say you
        (Bolkestein 1979: 20)

We must therefore allow for some mechanism of Accusative Agreement
inside the infinitival clause, since by assumption the passivized v of the
main clause cannot be responsible for this in cases like (54) and (56) and
neither can the noun *nuntius* in (55b). I propose, following Cecchetto and
Oniga (2001: 6), linking this to the fact that infinitivals bear morphological
marking of tense/aspect and voice in Latin. Thus, alongside the present
active infinitive, for example, *facere* ('to do'), we have the perfect active
fecisse ('to have done'), the future active *facturum esse* ('to be about do')
and the corresponding passive forms *factum esse* 'to have been done'
(perfect passive), *fieri* 'to be done' (present passive) and *factum iri* 'to be
about to be done' (future passive) (see Harris (1978: 195)). Although many
of these forms are periphrastic and imply a rather complex morphosyntac-
tic analysis which I cannot go into here, the coexistence of synthetic forms
like *fecisse* and *facere* suggests that Latin infinitives are significantly differ-
ent from those of Modern Romance, where no such opposition survives.
This is further supported, as Cecchetto and Oniga (2001: 6) point out, by
the fact that Latin accusative + infinitive clauses allow the full range of
infinitival tense-forms:

(57) a. Dicunt eum   laudare   eam.
        say-3pl him-Acc praise-infin-Pres her-Acc
        'They say that he praises her.'
     b. Dicunt eum   laudavisse   eam.
        say-3pl him-Acc praise-infin-perfect her-Acc
        'They say that he praised her.'

c. Dicunt eum   laudaturum   esse eam.
   say-3pl him-Acc praise-infin-fut to-be her-Acc
   'They say that he will praise her.'

Let us suppose that the tensed nature of Latin infinitives implies the presence of a functional head – presumably T – with the capacity to Agree with an Accusative subject. This can explain the data in (54)–(56). (Cecchetto and Oniga (2001: 26) make the same connection between tensed forms of infinitives and the possibility of Accusative subjects of infinitives, but in a technically more indirect way.)

The analysis of (54) just sketched provides a way of understanding why this variant of the accusative + infinitive construction did not survive in Romance. All other things being equal, we predict that it died out with the tense/aspect marking of infinitives, which appears to have died out in Vulgar Latin (Harris 1978: 195). I will return to the question of why the English-style option for the accusative + infinitive was lost. What is clear is that the accusative + infinitive was replaced by clauses introduced by *quod*, the final change to be considered. (Recall that there has been essentially no change in the nature of indirect questions; see (47e) and (48e) above.)

d. The commonest pattern of clausal complementation in Modern Romance involves a finite clause introduced by *que/che*, which derives from Latin *quod*, the nominative/accusative neuter form of the relative pronoun (or perhaps partly from the masculine accusative *quid*; Harris (1978: 228)). Since *que/che* clauses commonly appear as the complements of verbs of saying and believing in Modern Romance, they have clearly taken over much of the distribution of the Latin accusative + infinitive construction. *Quod*-clauses were originally found in various non-complement positions: for example as subjects or adverbials, as in (58):

(58) a. Multum ei   detraxit ... quod alienae   erat   civitatis.
        much him-Dat detracted ... QUOD foreign-Gen was-3sg city-Gen
        'The fact that he was from a foreign city detracted from him a great deal.'
        (Nep. 18, 1, 2; Ernout and Thomas 1993: 295)

     b. Adsunt   propterea   quod officium sequuntur.
        are.present-3pl on.that.account QUOD duty-ACC follow-3pl
        'They are present because they follow duty.'
        (Cicero; Kennedy 1962: 183)

Quod-clauses also followed adverbials such as *nisi* ('unless'), *praeterquam* ('except'), etc., and appeared to require a **factive** meaning, in that the truth of the proposition expressed by the complement clause was **presupposed** (see

Ernout and Thomas (1993: 295ff.) and note the factive interpretations of (47d) and (58); the factive interpretation is clearest where the verb is indicative. Still according to Ernout and Thomas (1993: 296), *quod*-clauses appear as complements to 'metalinguistic' verbs like *addere* ('add'), *praeterire* ('elude'), *mittere* ('omit'), and with impersonal eventive verbs, usually accompanied by an adverb, or *facere* ('do/make') accompanied by an adverb:

(59) accidit   perincommode quod eum nusquam vidisti.
     happened-3sg unfortunately QUOD him nowhere   saw-2sg
     'It is unfortunate that you didn't see him anywhere.'[21]
     (Cicero, *At.* 1, 17, 2; Ernout and Thomas 1993: 296)

Here too the factive interpretation is clear.

Finally, both Woodcock (1959: 23) and Ernout and Thomas (1993: 299) point out that *quod*-clauses first appear with verbs of saying and believing in apposition with a neuter form. (Kühner and Stegmann (1955: 270) give examples from Plautus illustrating this development.)

According to Ernout and Thomas, *quod*-clauses appear as a direct complement to verbs of saying and believing only in Vulgar Latin, in Petronius' imitations of the speech of the lower classes or freed slaves ('affranchis ou de petites gens', and the language of translations from Greek (following the *légo óti* 'I say that' pattern), especially Christian ones. Woodcock (1959: 23) points out that *quod*-clauses commonly appear instead of the Accusative + infinitive 'from the second century of our era.' Similarly, Kühner and Stegmann (1955: 279) say that *quod*-clauses replace accusative and infinitives in Late Latin. According to Ernout and Thomas, the earliest example is (60a); (60b) is from Petronius; (60c) is from the Vulgate:

(60) a. Legati   Carteienses renuntiaverunt quod Pompeium in
        legates-Nom from-Carteia announced-3pl QUOD Pompey-Acc in
        potestate   haberent.
        power-Abl had-3pl-subjunc
        'The legates of the people of Carteia announced that they had Pompey in their power.'
        (*B. Hisp.* 36, 1; Ernout and Thomas 1993: 299)
     b. Scis   quod   epulum   dedi.
        know-2sg   QUOD meal-Acc gave-1sg
        'You know that I gave a meal.'
        (Petronius 71, 9; Ernout and Thomas 1993: 299)

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[21] Ernout and Thomas' French translation is 'il est très malheureux que tu ne l'aies vu nulle part.'

c. Scimus   quia   hic   est   filius   noster.
   we-know   QUIA   this is   son   our
   'We know that this is our son.'
   (Vulgate: *John* 9, 20; Ernout and Thomas 1993: 299)

(*Quia*, 'because', was an alternative to *quod* at this stage, at least in ecclesiastical writers – see below).

It seems pretty clear, then, that *quod*-clauses were not true complements to verbs of saying and believing in Classical Latin, although they developed into complement clauses in Vulgar Latin. The factive interpretation of *quod*-clauses, their ability to appear as subjects and the origin of *quod* as a relative pronoun all point to an original status as a nominal. Let us suppose then that *quod*-clauses were DPs in Classical Latin, headed by the D *quod*, which in turn selected a CP (following Kiparsky and Kiparsky (1971); Farkas (1992); Roussou (1991; 1994) on the notion of factives as 'nominalized clauses'). This structure was reanalysed as a CP with C *quod* in Vulgar Latin, and as such it was able to appear in the complement to CP-taking verbs which in Classical Latin took the accusative + infinitive construction, i.e. verbs of saying and believing. The reanalysis is schematized in (61):

(61) $[_{DP} [_D \text{ quod }] [_{CP} [_{TP} \text{ epulum dedi }]]] > [_{CP} [_C \text{ quod }] [_{TP} \text{ epulum dedi }]]$

I will return below to the parameter change associated with this reanalysis.

Up to now I have been assuming a generic 'Romance' complementation system. However, it is worth pointing out that the system is quite different in a number of Southern Italian dialects. According to Rohlfs (1969: 190), '[F]rom Sicily up to Abruzzo, we see in use a double series of conjunctions', roughly corresponding to the distinction between Latin accusative + infinitive vs. *ut* clauses in their distribution (see also Manzini and Savoia (2005: 455ff.)). This is illustrated for some of these varieties in (62):

(62)   a. Sicilian: pensu **ca** vèni   vògghiu **chi** mmanciassi
       b. N. Calabrian: criju **ca** vèni   vuogliu **chi** mmangia
       c. Salentino: crisciu **ca** vène   ogghiu **cu** mmancia
                         'I think he'll come.' 'I want that he eat.'

The *ca* complementizer, corresponding to Latin accusative + infinitive, derives from Latin *quia*, which, as just mentioned, was an alternative to *quod* in Classical and Vulgar Latin. However, it appears that *quia* was more common than *quod* in the relevant contexts in older Latin (Ernout and Thomas 1993: 298), and so it is possible that this different system arose in

the area where Latin had been spoken longer. In this area, *quia*-clauses, reanalysed as in (61), took over from Latin accusative + infinitive, and *quod*-clauses, reanalysed in the same way, replaced *ut*-clauses. A consequence of this is that prepositional infinitives are rarer in these varieties than in 'Standard' Romance. In roughly this area, infinitives are highly restricted, occurring only in complements to 'semi-auxiliary' verbs like *volere* ('want'), etc. (see Ledgeway (2000: 70ff.)).[22]

Returning to the mainstream Romance system, let us recapitulate the changes we have discussed:

a. loss of *ut/ne* + subjunctive, replaced by prepositional infinitive;

b. restriction in distribution of the bare infinitive (except with 'cognitive verbs');

c. loss of accusative + infinitive in propositional complements;

d. the spread of *quod*-clauses into former (c) environments.

All these changes affected the realization of CPs. We can summarize the situation further by saying that two new complementizers emerged in Vulgar Latin: *quod* (through the reanalysis in (61)) and the prepositional complementizers *a* and *de* (through reanalysis of PPs as CPs). The former took over from the accusative + infinitive, and the latter from *ut* and from many instances of bare infinitives. It is important to see that this does not imply that the Classical Latin constructions were reanalysed as the Vulgar Latin ones; the Vulgar Latin constructions arose through reanalyses we have described and simply replaced the Classical Latin constructions.[23]

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[22] There is a further general complementation pattern in Romance, found in Rumanian and in two dialect areas of the extreme south of Italy (Southern Calabria/North-East Sicily and Salento). Here infinitives are almost entirely absent, and specific particles introduce the subjunctive clauses corresponding to Latin *ut*-clauses, as in the Rumanian examples in (i) and (ii):

(i) Cred   că va veni.
     I-believe that will come
     'I believe he'll come.'

(ii) Voiu   să vină.
     I-want Prt come-subjunc
     'I want him to come.'

This system is characteristic of the Balkan *Sprachbund*, and is plausibly attributable to the influence of Byzantine Greek (see Calabrese (1993: 73) on Salentino; Ledgeway (1998) on Southern Calabrian/North-East Sicilian).

[23] It is interesting to observe that *ut* probably underwent a reanalysis of a kind similar to that affecting *quod/quia*, in that it earlier functioned as an adverbial introducing a clause. According to Sihler (1995: 399) *ut*, or *uti*, comes from an

But in that case, what caused the Classical Latin constructions to disappear? We can simply assume that *ut* disappeared through phonological attrition. Regarding the accusative + infinitive construction, however, more needs to be said. This is where parameter change becomes relevant. Kayne (1984: 103ff.) observes that English and French differ in two ways as regards infinitive constructions. English allows accusative + infinitive constructions of the kind seen in (51) and (52) (i.e. where Accusative Case on the subject of the infinitive Agrees with v^* in the matrix clause), while French does not. Second, the English prepositional complementizer *for* itself probes Accusative Case on the subject of the complement infinitive:

(63) a. [For [him to leave]] would be a mistake.

b. It's nice for the rich [for [the poor to do the work]].

In French, on the other hand, prepositional complementizers cannot be followed by an accusative subject, or indeed any kind of overt subject. Leaving aside a number technicalities (most of which are in any case irrelevant to the version of minimalism we are loosely adopting here), we can formulate the following parameter:

G. does L allow accusative subjects in SpecTP of a non-finite clause?

We can see that Classical Latin and English have a positive value for this parameter, while the Modern Romance languages (quite uniformly, despite all the other differences in their complementation systems) do not.[24] A positive value for this parameter allows the English-style accusative + infinitive construction and requires prepositional complementizers introducing infinitives to be followed by overt subjects. Classical Latin in fact lacked this construction, as it did not have prepositional complementizers – these were a Vulgar Latin innovation; Kayne (1984: 117) observes these similarities and differences between Classical Latin and English. A negative value bans the English-style accusative + infinitive construction and overt subjects of infinitives introduced by prepositional complementizers. Technically, the parameter must be stated as an abstract property of C in facilitating or impeding Agree relations.

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earlier *k^wuta*, an indefinite/wh pronoun as the initial labiovelar indicates. (The initial k^w was lost by reanalysis of the negative form *$ne+cut(e)i$* as *nec+uti*). The original meaning was 'where, so that, as'. In being replaced by reanalysed *a/de* we observe a further case of a 'cycle' of grammaticalization (see §2.2).

[24] Recall that I am assuming that the complements to causative and perception verbs in Modern Romance are not CPs – see Chapter 1, note 15.

The value of Parameter G changed between Classical and Vulgar Latin.[25] This was caused by the reanalysis of *a/de* as C-elements and the loss of T's ability to Agree for Accusative inside infinitival complements, which we suggested above was related to the loss of tense/aspect distinctions in infinitives. The consequences of this parameter change were: the complete loss of the accusative + infinitive propositional complements and the associated reanalysis of factive *quod*-clauses as CPs, along with the reanalysis of accusative + infinitive clauses with a subject coreferent to the main clause as bare infinitives. So here we see the role of reanalysis and associated parameter change in changes in complementation.

The development of the prepositional infinitives was, however, a separate change (which played a causal role in relation to the one just described). This change seems to be connected to a separate parametric change concerning the nature of C. After this change, overt elements in C mark finiteness (*a/de* mark a non-finite CP and, after the change in the status of *quod*, this element marks a finite CP). In Classical Latin, however, overt complementizers marked the mood of the clause: *ut/ne* marked the clause as subjunctive, and wh-complementizers ((47e) above), prescriptively at least, were always followed by a subjunctive. Ernout and Thomas (1993: 313–5) point out that indicative indirect questions are found in Plautine Latin and in Vulgar Latin.[26] The fact that indirect questions clearly show up in the indicative in Vulgar Latin can be considered a further consequence of this parametric change. One cause of the reanalysis of prepositions as complementizers, as often pointed out (see for example Harris (1978: 198)) was the growing use of prepositions to mark case relations as the morphological case system began to suffer phonological erosion. This was particularly relevant as gerunds and supines, both clausal constructions in Classical Latin, required case. Hence, with the erosion of case marking and its replacement with prepositional constructions, prepositions began to be used with certain kinds of non-finite clauses. This may have facilitated the reanalysis of certain prepositions as complementizers.

So we see how two parameters, both concerning the nature of the category C, may have changed between Classical and Vulgar Latin in

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[25] It changed in the opposite direction in late ME, perhaps as a consequence of OV > VO word-order change. Fischer *et al.* (2000: 214ff.) provide a very interesting discussion of these developments.

[26] Recall that we have suggested that *quod* was not a complementizer in Classical Latin.

such a way as to facilitate the changes in complementation listed in (a–d) above and exemplified in (47) and (48). Of course, this brief sketch has left many questions open, but it serves to illustrate in general terms how the principles-and-parameters approach to diachronic syntax can account for this kind of change.

One traditional and often repeated view is that clausal subordination, or hypotaxis, is a relatively recent reanalysis of parataxis, or clause-chaining (see for example Ernout and Thomas (1993: 291)). This idea has a long history, going back at least to Schlegel (1808) (see Harris and Campbell (1995: 25–7, 282ff.)). However, the claim that earlier stages of certain languages may have lacked subordination altogether violates the **uniformitarian hypothesis**, the idea that all languages at all times reflect the same basic UG, and so cannot be taken seriously in the approach adopted here. In fact, Harris and Campbell (1995: 282ff.) provide good arguments against this idea. Their most incisive criticism runs as follows: '[e]ven if parataxis does develop into hypotaxis, in and of itself this does not tell us how hypotaxis, true subordination, developed' (1995: 286). So I conclude that the traditional parataxis-to-hypotaxis idea should be abandoned, as it is conceptually problematic and in practice unrevealing.

On the other hand, it is quite plausible that a language may lack finite clausal subordination of the familiar type exemplified by English *that*-clauses and Romance *que/che*-clauses. In fact, Classical Latin was such a language, if what we have said about *quod*-clauses here is correct. Moreover, it is very likely that Classical Latin was in this respect typical of the older Indo-European languages; on this point, see in particular Kiparsky (1995). Turkish is an example of a language in which the familiar pattern of finite complementation plays a fairly marginal role: complementation is typically expressed by various kinds of nominalization (Kornfilt (1997: 45ff.)). In fact, the analysis of the development of Romance complementation sketched above implies that finite complementation is a parametric option, and the synchronic and diachronic evidence is that this is basically correct. Of course, it is entirely likely that a notion such as 'finite complement clause' is too coarse-grained, and would need to be replaced by something more abstract.

Related to the traditional parataxis-to-hypotaxis idea is the notion that adjunct clauses of various kinds may be reanalysed as complements. This idea is discussed in Harris and Campbell (1995: 287ff.), Kiparsky (1995); Roberts and Roussou (2003: 110ff.). Each of these approaches postulates a reanalysis roughly along the following lines:

(64)   I think [$_{nominal}$ that] [$_{clause}$ the world is round] >
       I think [$_{clause}$ [$_C$ that] [the world is round]]

Reanalysis along these lines seems to have taken place in Germanic (Harris and Campbell (1995: 287–8); Kiparsky (1995); and Roberts and Roussou (2003: 116–20)) and Greek (Roberts and Roussou 2003: 120–1). Something like this may have happened at an early stage of the development of *quod*. The fact that finite complementizers very often develop from relative or demonstrative pronouns is clearly consistent with this. We can also note that the development of prepositional complementizers may involve a reanalysis partially similar to those seen in (61) and (64), whereby the sequence P+DP is reanalysed as C+TP (see Haspelmath (1989), Harris and Campbell (1995: 293)).

   We have seen in this section that rather complex and pervasive changes in clausal complementation can be linked to two relatively simple but rather abstract parameter changes and their associated reanalyses. I have illustrated this with one case: the changes from Latin to Romance. However, there is nothing particularly unusual in these developments, and they are representative of the kinds of changes which can take place in complementation systems. If so, then what we have seen here is an illustration of how changes in the complementation system can be handled in terms of parametric change affecting the category C.

2.5. Word-order change: OV > VO in English

2.5.1. Introduction

In this section I will focus simply in the alternation between OV and VO orders, i.e. I will restrict attention to parameters F1 and F3 as defined in §1.6.1. Concerning parameter F1, we have already observed several times that Old English showed OV word order in embedded clauses. The following examples, which by now may be familiar, illustrate this:

(65)   a. ... þæt I þas boc of Ledenum gereordre to Engliscre spræce awende.
          ... that I this book from Latin language to English tongue translate
          '... that I translate this book from the Latin language to the English tongue.'
          (AHTh, I, pref, 6; van Kenemade 1987: 16)

b. ... þæt he **his** stefne up **ahof**.
    ... that his voice up raised
    '... that he raised up his voice.'
    (*Bede* 154.28)

c. ... forþon of Breotone **nædran** on scippe **lædde wæron**.
    ... because from Britain adders on ships brought were
    ' ... because vipers were brought on ships from Britain.'
    (Bede 30.1–2; Pintzuk 1991: 117)

We saw in §1.3.2 that OE had verb-second order in main clauses, and so we do not expect to find overt OV order in such clauses, unless of course the object is fronted to first position. The position of the auxiliary in (65c) indicates a further pattern which has changed since OE: the finite auxiliary in a subordinate clause followed the non-finite verb. This fact can be related to OV order in terms of parameter F3 of §1.6, which I repeat here:[27]

(66) F3. Does the structural complement of V/T precede or follow V/T?

It appears, then, that F3 had the value PRECEDE in OE, while of course it has the value FOLLOW in NE. It has therefore changed in the course of the history of English. The goal of this section is to investigate in more detail what this assertion may mean, whether it is correct, and, if it is incorrect, how examples like those in (65) are to be interpreted.

2.5.2. Early typological approaches to word-order change

The earliest approaches to word-order change were directly inspired by Greenberg's (1963) observations of implicational relations among word-order types. W. Lehmann (1973) made two important proposals in this connection. First, he argued that subjects, since they may be dropped in many languages and can be pleonastic in any language (as far as is known), are not 'primary elements' of the clause. This reduces the word-order types to two: OV and VO. Second, Lehmann proposed that, in typologically consistent OV languages, verbal modifiers appear to the right of V and nominal modifiers to the left of O; in consistent VO languages we find the opposite pattern.

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[27] F3 might be reformulated in the light of the postulation of vP between T and VP, but I leave this possible complication aside for the moment. I will return to v's possible role in word-order change in §2.5.4 below.

Now, many, or probably most, languages are inconsistent in relation to this typology (cf. NE, which is VO with preverbal modifiers, consistent with the typology, but it also has prenominal adjectives and possessors, inconsistent with the typology). To account for this, Lehmann proposed that 'when languages show patterns other than those expected, we may assume they are undergoing change' (55). Applied to the history of English, then, we could observe that, throughout its history, English has been drifting from OV to VO. Presumably, ME represents the period in which this very determinant of word order was in transition from one type to the other. This statement, in Lehmann's system, would automatically predict a shift from VAux to AuxV order at the same period. Lehmann's system also predicts a shift from RelN to NRel order in the history of English (see §1.6 for an illustration of this typological property); this is correct, although one could not claim that ME was the transition period for this change, as NRel already predominates in OE.[28] It seems unsatisfactory to consider the historical persistence of such 'mixed' systems as simply a feature of diachronic transition from one type to another. By this criterion, English has been in transition throughout its entire history, probably since Proto-Germanic. If F6 of §1.6.1 is a true parameter, then the same point could of course be made in relation to a putative change in its value from PRECEDE to FOLLOW.

Vennemann (1974) also advocated reducing Greenberg's word-order types to OV and VO, leaving subjects out of the picture. He develops the Natural Serialisation Principle (or NSP, originally proposed by Bartsch and Vennemann (1972: 136)), which requires Operators and Operands to be serialized in a consistent order – either Operator Operand, or Operand Operator – in any language. Since objects, along with adjectives, relative clauses, etc. are Operators and verbs and nouns Operands, the NSP predicts the correlations with OV and VO orders which we observed in §1.6.1, and of course also predicts diachronic correlations. As in the case of Lehmann's approach, the difficulty is that we are led to regard 'mixed' systems as persisting over very long periods, and, correspondingly,

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[28] See J. Hawkins (1983: 222), who states that Late Common Germanic was already NRel. The claim that the oldest attested IE languages were already NRel is in fact important for Lehmann's reconstruction of IE relatives (W. Lehmann 1974: 25). NE also retains Adjective-Noun order rather than the predicted Noun-Adjective order although ME arguably had a greater incidence of NA order than does NE (J. Hawkins 1983: 258).

individual changes in parameters like those in F3 as taking place over similar periods (cf. Vennemann's (1974: 353) remark that 'a language may become fairly consistent within a type in about 5000 years' (for example, English)). As various authors, for example, Comrie (1989) and Song (2001) have pointed out, this casts doubt on the strength of word-order conformity as a causal factor in change. This point is succinctly summarized in the following remark by Song (2001: 304):

[T]ypological consistency must at the same time be considered to be strong and weak ... It must be weak enough to permit incongruous word order properties to be incorporated into typologically consistent languages in the first place and it must also be strong enough to remedy the resulting situation by bringing all remaining word order properties into line with the new ones.

Regarding the synchronic predictions, J. Hawkins (1983: 41) points out that up to 77 per cent of the languages in Greenberg's original thirty-language sample do not conform to the NSP, and observes that 'the NSP's predictions are both too strong – there are too many exceptions – and too weak – there are distinctions between attested and non-attested language types that it is failing to capture' (42).

Again we see the essential empirical inadequacy of this kind of approach. And once again, we must bear this in mind in relation to the status of the generalized head-complement parameter F6 of §1.6.1.

Lightfoot (1999: 207ff.) makes a different kind of criticism, observing that long-term changes of the type envisaged by Lehmann and Vennemann are incompatible with a view of grammar as a cognitive module in the sense advocated by Chomsky. (This idea and the justification for it were presented in the Introduction to Chapter 1.) His point is that if grammars are psychological entities, then they are properties of individuals; they are reinvented anew with each generation of children. Long-term diachronic drift would then, all things being equal, entail a kind of 'racial memory' (209) on the part of the children acquiring language in order to cause the drift to continue in a consistent direction. Notions such as racial memory have no place in modern scientific theories, and so, to the extent that an approach like Lehmann's or Vennemann's, combined with a generally Chomskyan view of the nature of language, entails such a thing, we must reject either the Lehmann–Vennemann account or the Chomskyan view of language. Lightfoot strongly advocates rejection of the former. We will reconsider this argument when we come to consider Sapir's (1921) notion of drift in §4.3.

Despite these general difficulties with the NSP, Vennemann (1974: 359) proposes an interesting analysis of OV > VO change. The central idea relies on Greenberg's Universal 41:

(67)   If in a language the verb follows both the nominal subject and nominal object in dominant order, the language almost always has a case system (Greenberg 1963: 96).

Vennemann's central idea is that 'as reductive phonological change weakens the S-O morphology, and does not develop some substitute S-O [subject-object distinguishing – IGR] morphology, the language becomes a VX language.' This would naturally link the loss of case morphology, one type of 'S-O morphology', with the change from OV to VO. This seems attractive as an account of this change in both English and in the development from Latin to Romance, as this change was accompanied by the loss of morphological case marking (on non-pronouns) in both languages. However, it is clear that the loss of case is neither necessary nor sufficient for OV > VO change. Greek and Icelandic have both undergone this change while retaining their case systems; this point was also made by Kiparsky (1996: 142). (See A. Taylor (1994) on Greek, and Hróarsdóttir (1999) on Icelandic, which we also mentioned in §1.6.2.) According to Comrie (1989: 214–15), the Baltic and the Slavonic languages may be similar. Conversely, Dutch has largely lost its case system and yet has remained underlyingly OV, according to mainstream generative analyses, beginning with Koster (1975). Finally, Comrie (ibid.: 214) points out that Proto-Niger-Congo has been reconstructed as an SOV language without case, and many languages have changed to SVO, still with no case; and so this is an example of OV changing to VO quite independently of the loss of case.

J. Hawkins (1983: 134) proposed Cross-Categorial Harmony (CCH) as a generalization over many of Greenberg's implicational universals, as well as a number of exceptions to them. J. Hawkins states it as follows: 'there is a quantifiable preference for the ratio of preposed to postposed operators within one phrasal category … to generalize to the others.'

The term 'operator' is taken from Vennemann's work, and so may be understood as described above. It is important to note that the principle is stated as a preference, rather than as an absolute requirement, and so grammars tend to correspond to it but do not have to. Furthermore, the principle makes reference to phrasal categories, explicitly acknowledging that phrase structure plays a role in accounting for these correlations.

In fact, J. Hawkins (179ff.) adopts X'-theory as the prime structural explanation for the CCH. X'-theory is the theory of phrase structure a variant of which was summarized in (55) of Chapter 1. The central idea of X'-theory is that all categories conform to the same structural template, which I repeat here as (68):

(68)   a. [$_{XP}$ YP [$_{X'}$ X ...]]   (YP is a specifier of XP)
       b. [$_{X'}$ X   YP]   (YP is the complement of X)

As J. Hawkins points out (183), the basic advantage of X'-theory is that, since it offers a category-neutral template for phrase structure, it is well-suited to the expression of cross-categorial generalizations like the CCH. We observed in §1.6.1 that a general head-complement ordering parameter of the kind given there as Parameter F6 – repeated here as (69) – would predict spectacular cross-categorial harmony:

(69)   F6. For all heads H, does the structural complement of H precede or follow H in overt order?

However, it is clear that, as it stands, such a parameter is subject to criticisms of the kind summarized above in relation to the early proposals of Lehmann and Vennemann. J. Hawkins, however, interprets the CCH as a preference (and note that Dryer (1992) formulates his BDT as a preference too; see §1.6.1). In fact, J. Hawkins suggests that the CCH may derive from a preference for relatively simple grammars, since 'the more similar the ordering of common constituents across phrasal categories at the relevant bar levels, the simpler are the word order rules of the grammar.' If this is correct, then F6 cannot be a single parameter; cross-categorial harmony must derive from some higher-order factor determining interactions among formally independent parameter values, perhaps a simplicity metric of some kind. We will return to this idea in §3.5.

2.5.3. Generative accounts and directionality parameters

van Kemenade (1987), to some extent developing ideas in Canale (1978) and Hiltunen (1983), influentially applied X'-theory to accounting for the OV > VO change in the history of English. A general assumption in syntactic theory at the time was that there was a level of syntactic *representation*, known as the base, where the X' template held in a 'pure' form. (This assumption has been dropped in minimalist versions of syntactic

theory.) This template was subject to manipulation through movement operations at later stages of the derivation (cf. the discussion of Move in Chapter 1, Box 1.1). We can thus speak of 'underlyingly' VO or OV languages, i.e. we may take a parameter such as F3 or F6 to hold in the base but to be to some extent obscured by the action of subsequent movement operations. The word-order parameters assumed in this type of theory clearly have a more abstract status than the word-order variants assumed by Lehmann, Vennemann, and J. Hawkins. Moreover, this approach allows for the possibility that surface orders may diverge from the underlying order. As long as this divergence is somehow accessible to language acquirers, then the underlying order can be set, i.e. the parameter controlling the base order can be set. If the divergence becomes too great, then acquirers may reset the parameter (the Transparency Principle might again be relevant here; §2.1.2).

In these terms, a parameter like F6 derives from the option of head-initial or head-final order within the category formed by the head and its complement in the base, prior to the operation of any movement rules. Correspondingly, a parameter like F3 derives from a similar option where the head X is specified for some set of categorial features. This order may thus be H – XP (head-initial) or XP – H (head-final). van Kemenade assumed the OE order to be XP – H for H=V; this corresponds to our parameter F3, since van Kemenade assumes that auxiliaries, which we take to be T-elements, are verbs with sentential complements.[29] van Kemenade shows how certain movement operations disguised this underlying OV order in various ways. One such operation is known as extraposition, which moves a range of complements to the right of the verb, as shown by examples like the following:

(70) a. ... þæt ænig mon atellan mæge [ealne þone demm]
          ... that any man relate can   all   the misery
          ' ... that any man can relate all misery'
          (*Orosius* 52.6–7; Pintzuk 1991: 36)

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[29] In fact, van Kemenade took this order to be the consequence of the direction of assignment of thematic roles. If thematic roles are assigned to the right, the head assigning those roles precedes the complement being assigned them. If the roles are assigned to the left, the complement precedes the head. This, however, causes the parameter only to apply to cases where the head takes the complement as its semantic argument. It seems, though, that F6 has a wider purview than this, as was discussed in §1.6.1.

b. Æfter ðisum gelamp þæt micel manncwealm becom [ofer þære
   after this happened that great pestilence came over the
   Romaniscan leode].
   Roman people
   'Then it happened that a great plague came over the Roman people.'
   (*AHTh*, II, 122, 15; van Kemenade 1987: 40)

In (70a) an object DP, and (70b) a PP, appears to the right of the finite verb
in a subordinate clause. We thus say that the DP and PP are extraposed.

Now, PP-extraposition as in (70b) is also found in Modern Dutch and
German, but not DP-extraposition of the kind seen in (70a). Starting with
Stockwell (1977), it has been proposed that OE, especially in later periods,
extended the incidence of DP-extraposition to a wider range of DPs than
Dutch or German, in particular to 'light' DPs. Pintzuk and Kroch (1989)
showed that in early OE (in the eighth-century epic poem *Beowulf*) only
prosodically heavy DPs were postverbal in subordinate clauses and these
were preceded by a metrical break. In later OE prose, on the other hand,
this is clearly not the case; see Fischer *et al*. (2000: 148–9) for discussion.
Examples like (71) illustrate this:

(71)   Þu hafast gecoren [DP þone wer].
       thou hast chosen   the man
       (*ApT* 34.23; Fischer *et al*. 2000: 148)

Here, just the light DP *þone wer* is extraposed, and there is no evidence for a
prosodic break after the participle *gecoren*. van Kemenade (1987: 41)
concludes: 'It is quite possible then, that the phenomenon of extraposition
started off in early OE as the postposing of heavy constituents such as S
[sentence/clause – IGR], PP and heavy NP's, and was extended later to
include other constituents, light NP's, adverbials.'

A second factor was 'verb raising' and 'verb-projection raising'. These
operations, the former found in Dutch and the latter in West Flemish and
Swiss German dialects, derive orders in which the non-finite verb and possibly
some of its complements appear to the right of the finite auxiliary. This is the
opposite of the expected order in a language where V and T underlyingly follow
their complements. For recent analyses of these phenomena in Modern West
Germanic languages, see Hinterhölzl (1997) and Koopman and Szabolcsi
(2000). OE had both operations, as the following examples illustrate:

(72)   a. ðæt he Saul ne **dorste ofslean**   (verb raising)
          that he Saul not dared murder

'that he didn't dare to murder Saul'

(*CP*, 199, 2; van Kemenade 1987: 59)

b. þæt he **mehte his feorh generian**   (verb-projection raising)

   that he   could his property save

   'so that he could save his property'

   (*Oros*, 48, 18; van Kemenade 1987: 59)

van Kemenade (1987: 177) points out that the underlying order of OE was 'not easily retrievable from surface patterns' owing to the surface orders created by extraposition and verb(-projection) raising.[30] This was a major factor leading to the change in the parameter governing the underlying order. As a consequence 'the underlying SOV order changed to SVO. This change was completed around 1200' (van Kemenade 1987: 177). A similar idea is proposed by Stockwell (1977), while Stockwell and Minkova (1991) suggest that main-clause V2, which gave rise to many surface VO orders, may have influenced the acquisition of subordinate OV order, and once this became VO it in turn influenced main-clause order.

Lightfoot (1991) makes a different proposal regarding the relation between word-order change in main and embedded clauses. He proposes a broadly similar account to van Kemenade's in that movement rules obscure the underlying order in such a way as to ultimately lead to a change in the value of the parameter determining the underlying order. He assumes a parameter determining underlying word order of the same general kind as that assumed by van Kemenade (his (6b, 42)). However, he assumes that language acquirers only have access to main clauses as trigger experience. They are 'degree-0 learners' in Lightfoot's terminology, meaning that they can only access material which involves no clausal embedding. In OE main clauses, as we have seen (see §1.3.2), the finite verb appeared in second position. Hence the underlying OV order was obscured by the movement of the verb (to C, according to the standard analysis of V2 as summarized in

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[30] van Kemenade also assumes that the parameter-settings responsible for OE word order were inherently marked. This is because she assumes that Nominative and Accusative Case are assigned from left to right while, as we mentioned in note 29, thematic roles are assigned from right to left. In current work, the earlier notion of Case-assignment is subsumed under the Agree relation introduced in §1.4.1, as we saw in §2.3. For this reason I leave this aspect of van Kemenade's account aside here. The idea that extraposition and verb(-projection) raising would have obscured the underlying OV parameter value still holds, independently of these details of van Kemenade's analysis.

§1.3). Of course, the same situation obtains in Modern Dutch and German. However, Lightfoot argues (52ff.) that '[v]erb-second languages typically have unembedded "signposts" indicating the movement site of the verb'. These include the final position of the particle where the verb is a particle verb (these are known as 'separable prefixes' in many pedagogical grammars of German), the position of the non-finite main verb where there is a finite auxiliary, or auxiliary-like, verb (i.e. where a single clause contains two verbal elements), and the position of 'verbal specifiers such as negatives and certain closed-class adverbials' which must, he assumes, be merged immediately to the left of VP. The linear separation of the finite verb from these elements is illustrated by the following Dutch examples:

(73) a. Jan **belt** de   hoogleraar **op**.
         John calls the professor   up.
      b. Jan **moet** de   hoogleraar **opbellen**.
         John must   the professor   up-call
         'John must call the professor up.'
      c. Jan **belt** de   hoogleraar **niet** **op**.
         John calls the professor   not   up
         'John doesn't call the professor up.'

This linear separation of V from its complement triggers V-movement, and allows the degree-0 learner to postulate the underlying OV word order. This is the situation in Modern Dutch and German.

   Furthermore, Dutch and German both allow main-clause infinitives with a particular illocutionary force; (74) for example is a rhetorical question:

(74) Ik de   vuilnisbak   buiten   zetten?   Nooit.
       I   the garbage-can outside put?   Never
      'Me put the garbage can outside? Never.'

In OE, however, at least two of the three 'signposts' showing linear separation of the finite verb and its complement are either absent or unclear, while the third has, according to Lightfoot, an uncertain status. The clearest observation is that OE negation involved the preverbal proclitic *ne*, rather than an adverbial element appearing to the left of VP as in Dutch and German. As a proclitic, *ne* is always directly adjacent and to the left of the finite verb:

(75) **Ne** geseah ic   næfre   ða   burh.
       not   saw   I   never   the city

'I never saw the city.'
     (Ælfric, *Homilies* I.572.3; Lightfoot 1991: 62)

So the position of negation in OE does not function as a 'signpost' for the base position of the verb.

Second, particles were often fronted along with the verb in second position in OE, unlike their Dutch and German counterparts:

(76) Stephanus **up-astah** þurh   his blod gewuldorbeagcod.
       S.   up-rose   through   his blood glory-crowned
       (*Homilies of the Anglo-Saxon Church* I, 56; Lightfoot 1991: 61)

Regarding the position and status of non-finite verbs, Lightfoot (62) suggests that the relevant structures did not exist in OE. Thus, Lightfoot has grounds for asserting that the 'signposts' for underlying OV order in main clauses were less clear in OE than in Modern Dutch or German. Since, by the degree-0 hypothesis, language acquirers have no access to potential triggers in embedded clauses, the relatively systematic OV order of embedded clauses was not relevant to determining the value of the parameter.

On the other hand, OE did allow finite clauses with the verb in final position, in particular in the second conjunct of coordinate constructions, as in:

(77) and his eagan **astungon**
       and his eyes (they) put out
       (Parker, *Anglo-Saxon Chronicle* 797; Lightfoot 1991: 58)

Such constructions gradually become less frequent during OE. Then 'as matrix instances of object-verb diminished to a certain point, underlying object-verb order became unlearnable and the verb-order parameter came to be set differently' (67). The indications are that this was an abrupt change in word order in embedded clauses in the twelfth century, as originally shown by Canale (1978). (We will see directly that this factual claim regarding both the date and suddenness of the change has been challenged.)

Whatever the merits of the idea that children are degree-0 learners, Lightfoot's account illustrates in a rather different way from van Kemenade's how a parameter determining underlying word order can change owing to that word order being distorted on the surface in a crucial way as the result of a movement operation.

Both Lightfoot and van Kemenade date the change in the relevant parameter to approximately the twelfth century. However, there are some difficulties with this. As van Kemenade (1987: 178) says, 'the older word order did not, of course, become immediately ungrammatical ... For a long time we continue to find OV structures, but ... these were not firm enough in the language environment to trigger the older, marked situation.' Similarly, Fischer *et al.* (2000: 162) point out that '[i]t is only after about 1300 that clauses with VO order begin to vastly outnumber those with OV order'.

They give, among others, the following late example of OV order, from Chaucer (late fourteenth century):

(78) I may **my persone and myn hous so kepen and deffenden.**
      'I can keep and defend myself and my house in such a way.'
      (Chaucer *Melibee* 1334; Fischer *et al.* 2000: 163)

Foster and van der Wurff (1997) give the following ratios of VO to OV orders in poetry at fifty-year intervals in late ME: 2 (1350), 5 (1400), 13 (1450); in prose 4, 22 and 160. Clearly, some account must be given of the persistence of the OV orders into later ME.

Conversely, as already mentioned, OE shows a wider range of possible word orders, in both main and embedded clauses, than do Modern Dutch and German. Of particular importance in this connection are subordinate clauses with elements following a non-finite verb which are known not to appear to the right of such verbs in any Modern Germanic language: particles, pronouns, and light adverbs. These orders are illustrated in (79):

(79) a. He wolde **adrǣfan ut**   anne æþeling.
          he would drive out a   prince
          'He would drive out a prince.'
          (*ChronB* (*T*) 82.18–19; Pintzuk 1991: 163)

      b. swa þæt hy **asettan   him**   upp on ænne sið.
          so   that they transported themselves inland on one journey
          'so that they transported themselves inland in one journey.'
          (*ChronA* 132.19 (1001); Pintzuk 1993: 17)

      c. þæt Martinus **come þa**   into þære byrig.
          that Martin   came then into the   town
          'that Martin then came into the town.'
          (*ÆLS* 31.490–491; Pintzuk 1993: 17)

These orders look very similar to those of NE, and are usually interpreted as being an instantiation of the innovative order, in part because an extraposition analysis would either have to involve extraposition of particles,

pronouns or light adverbs, not usually thought to be possible, or of the implausible constituents consisting of these elements and the following material; *ut anne æþeling, him upp on ænne sið, þa into þære byrig* in the examples in (79), for example. If this is literally true, then OE must have already allowed head-initial orders. Pintzuk (1991; 2002) develops this idea by proposing that OE had a 'double base': both the OV and the VO value of the relevant parameter were allowed, giving rise to two distinct grammars through the OE period. This approach can account elegantly for some of the variation in word order (see Pintzuk (1991: 367ff.) for discussion), and we will return to the notion of grammars in competition in §4.1, §4.2, and §5.2.[31] However, it is not clear what caused one of the two grammars (the OV one, in the case of the history of English) to fall out of use at the time it did. The notion of change in parameter values is not useful here. What appears to be clear, however, is that the transition from the old OV to the new VO system to the new VO one was not as abrupt as van Kemenade and, in particular, Lightfoot, imply.

An important feature of the OV orders which appear in later ME is that they show a growing preponderance of quantified or negative objects. Kroch and A. Taylor (2000) show, by comparing a group of early thirteenth-century texts with a group of Late Middle English texts, that quantified objects appeared preverbally at both periods. In the later period, however, OV order was all but confined to quantified and negative objects. This conclusion is supported by data from fifteenth-century correspondence reported in Moerenhut and van der Wurff (2000) and Ingham (2001; 2002).[32] Fischer *et al.* (2000: 163) state that fourteenth-century English continued to allow OV with non-quantified objects, but that fifteenth-century English

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[31] An interesting variant of this approach, where a major restriction is imposed on which categories can show parametric variation in head-complement order, and therefore coexisting word-order patterns, is developed by Fuß and Trips (2002). We will briefly consider Fuß and Trips' proposal in §4.2.

[32] Ingham (2001) relates the restriction to quantified/negative preverbal objects in fifteenth-century English to the constructions like that in (i), with the expletive *there* and a negative subject:

(i) Ther shal no thing hurte hym.
      (*PL* 209, 12; Ingham 2001: 23)

This is a further example of a transitive expletive construction, of the type *discussed* in §1.3.1.3.

only allowed OV where O was negative or quantified, or where there was an empty subject, as in a co-ordinate or relative clause. (80a,b) are examples from later ME of OV order with a quantified object, and (80c) illustrates OV order with an empty subject:

(80) a. Þei schuld **no meyhir haue**.   (negative object)
         'They were not allowed to have a mayor.'
         (Capgrave *Chronicles* 62.23; Fischer *et al.* 2000: 163)

      b. He haþ on vs mercy, for he may **al þynge do**   (quantified object).
         'He has mercy on us, for he can do everything.'
         (*Barlam* 2740; van der Wurff 1999: 8)

      c. alle þat **þis writinge redden or heere**
         'all that will read or hear this writing'
         (*Sermon* 2250; Fischer *et al* 2000: 163)

It seems, then, that OV order with quantified and negative objects was lost later than OV order with non-quantified and non-negative objects. In fact, Pintzuk (2002: 295–7) suggests that OV orders with quantified objects had a different status from those with non-quantified objects as early as OE. If so, then it is not surprising that the two types of OV order may have been lost at different times. In this connection, we note that the Greenbergian categories OV and VO are not sufficiently fine-grained to account for the observations that have been made. Finally, van der Wurff and Foster (1997) observe that surface OV disappears completely from prose writings during the sixteenth century.

Earlier, we criticized the Lehmann–Vennemann kind of approach to word-order change, in part because it leads to the conclusion that the change takes place over too long a period. What we have seen above suggests that an approach of the sort advocated by van Kemenade and Lightfoot has the change taking place too quickly; both before and after the alleged turning point, which they situate in the twelfth century, we find, respectively, the innovative order (cf. Pintzuk's evidence from OE, of the kind in (79)) and the conservative order (it is clear in particular from Fischer *et al.* (2000: 163) that OV with a non-quantified object was found in the fourteenth century, as illustrated by (78)). Moreover, neither the gradualist Lehmann–Vennemann approach nor the catastrophist van Kemenade–Lightfoot approach can account satisfactorily for differences between early and late ME regarding negative and quantified objects in OV order. Where does this leave the idea that parameter F3 changed in ME?
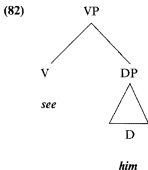
2.5.4. 'Antisymmetric' approaches to word-order change

We have several options in dealing with this situation. One option is to retract any attempt at cross-categorial generalization and revert to the position that the relative order of complement and head is to be restated for each category of head. As mentioned in §1.6.1, in connection with certain difficulties posed by German and Dutch for approaches to cross-categorial harmony, this would effectively make any implicational generalizations about word order of a synchronic or diachronic nature appear to be an accident.

Let us instead consider a different technical implementation of the parameters governing word-order variation. Kayne (1994) proposes the Linear Correspondence Axiom (LCA) as a principle of phrase structure. This can be stated as follows (this is an informal, simplified statement; for the original, see Kayne (1994: 5–6)):

(81)   A terminal node α precedes another terminal node β, if and only if α asymmetrically c-commands β.

Terminal nodes are nodes which do not dominate anything, while nonterminals dominate something. We can see the implication of (81) for word order if we consider a simple verb-complement structure like (82), where for simplicity we assume that pronouns such as *him* are Ds:

(82)

```
              VP
             /  \
            /    \
           V      DP
          see     /\
                 /  \
                /____\
                  D

                 him
```

Here V asymmetrically c-commands D and so, by the LCA, *see* must precede *him*. Given the LCA, there is no possibility of parametric variation in underlying head-complement order of the type assumed in particular by van Kemenade (1987) and Lightfoot (1991). Instead, the natural assumption (although not the only logically possible one) is that all languages are underlyingly VO, and OV orders are derived by leftward-movement of

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BOX 2.1   Merge and the LCA

Strictly speaking, the presentation of the LCA here is not compatible with the structure-building operation Merge. In the Introduction, I presented Merge as the operation which 'combines two syntactic elements (in the simplest case, two words) into a more complex entity which consists of those two elements and its label; the label being determined by one of the two elements' (4). Merge is thus an intrinsically binary operation. However, in (82) him_D does not appear to have merged with anything. The discrepancy is in part due to the fact that Kayne (1994) does not assume Merge. If we 'correct' the structure in (82) to bring it into line with Merge we have (1):

(1)
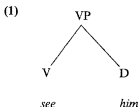
Here *him* is simultaneously maximal, in that it is immediately contained in a different category, and minimal, in that it does not itself contain anything. More generally, if we wish to make (82), and hence the LCA, compatible with the symmetrical nature of Merge as we have defined it we will always run into problems with the most deeply embedded category; the right branch of all higher categories is recursive and hence there is an asymmetric relation between the terminals which permits the LCA to determine linear order. This can be seen from the abstract phrase marker in (2).

The LCA defines the linear order A>B>C>{D, E}, but cannot order D and E. Since all trees must terminate with a non-recursive right branch, the problem of ordering the terminal on this branch with that on its sister will always arise.

One way to solve this 'rightmost-branch problem', suggested by Chomsky (1995: 337), is to require that one of the elements merged at the most deeply embedded level is phonologically null. This is legitimate

(2)
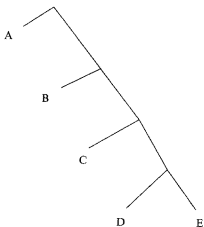
since 'there is no reason for the LCA to order an element that will disappear at PF' (Chomsky 1995: 337). In this case, we can assume an empty N-element is merged with D, perhaps as a consequence of the inherent nature of D, so this would give (3) instead of (1):

(3)
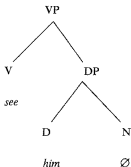
Cardinaletti and Starke (1999) present a general analysis of the internal structure of pronominal DPs. It is not clear whether this proposal can provide a general solution to the rightmost-branch problem, however.

objects. This idea extends to all cases where a complement precedes its head in surface order; it must have been fronted to that position from an underlying post-head position determined by the LCA.

When I introduced the idea of movement in §1.3.1, I stated that movement was a matter of purely arbitrary variation among grammatical systems. In fact, Chomsky (2000) proposes that movement depends on Agree. A precondition for movement to relate two positions is that the two positions be in a Probe-Goal relation. Movement takes place where the Probe, in addition to having uninterpretable morphosyntactic features of some kind (see §1.4.1), also has an extra property which causes the Goal to undergo 'second Merge' (see Chapter 1, Box 1.1). Let us call this property 'attraction' of the Goal. Whether a given category is an attractor in this sense indeed appears to be a matter of arbitrary variation, although it is thought that only functional categories can be attractors. Following Chomsky (2000; 2001), I will indicate this attraction property with an Extended Projection Principle, or EPP, feature. (We mentioned the earlier conception of the EPP in note 17 of Chapter 1.) Where a Probe P is an attractor I will write it as P[+EPP]. Since many parameters involve the presence or absence of movement (for example, those connected to verb-movement discussed in §1.3), whether or not a Probe has an EPP feature is an important aspect of parametric variation; I will return to this point in §3.5.

Given this view of movement along with the interpretation of Kayne's proposals just sketched, OV systems differ from VO systems in that some Probe P to the left of and structurally 'higher' than VP attracts the object, i.e. it enters the Agree relation with the object and triggers object-movement, so P would have an uninterpretable feature of some kind. The obvious candidate for P is v, since we saw in §2.3 that this element has uninterpretable φ-features which probe the direct object and allow the object's ACC-feature to be deleted. OV order arises when v* has an EPP feature. This gives the following derived structure:

(83) $[_{v*P}$ DP-Obj v*[uφ, EPP] $[_{VP}$ V (DP-Obj)]]

The change from OV to VO must then be seen as the loss of the trigger for movement, i.e. the loss of v*'s EPP feature. Using different technical devices, an approach to word-order change in English of this kind was first proposed in Kiparsky (1996: 152) and developed in Roberts (1997). It has also been adopted by van der Wurff (1997; 1999); Fischer *et al.* (2000); and Ingham (2001; 2002), and by Hróarsdóttir (1999; 2000) for word-order change in Icelandic.

The approach, which we will refer to as the 'antisymmetric approach' since the LCA requires phrase structure to be antisymmetric, has a number of advantages. One conceptual advantage is that it eliminates the possibility of changes in the operation of Merge itself; only Move and Agree may vary and these are completely conditioned by the feature-content of functional heads. This is advantageous in that the range of formal options that the child must consider in setting parameters is limited. Indeed, we can continue to maintain that all parametric variation concerns Agree or Move; Merge is invariant. (We return to this point in §3.5.) Limiting the options of formal variation in this way is a good thing, in that it takes us a small step further towards reconciling poverty-of-the-stimulus considerations with the attested variation in grammatical systems (cf. the discussion in §1.1). This point has an important corollary when we consider change: it implies that changes must always concern Agree or Move, a point I will return to in §3.4 and §3.5. In this connection it is interesting to note Kiparsky's (1996: 140) comment that 'OV base order is commonly replaced by VO, whereas the reverse development is quite rare'. If OV order is derived by movement, as the antisymmetric approach implies, and if the loss of movement is a natural kind of syntactic change, then we understand why this is so.

Second, the antisymmetric approach to word-order change makes possible a more fine-grained empirical analysis, as movements can be selectively triggered. For example, we might claim that until around 1400, following Fischer *et al.*, v* triggered movement of objects generally, much as schematized in (83), while in fifteenth-century English v* only triggered movement of quantificational or negative objects, in virtue of having one of the two specifications [uφ] or [uφ, uOp, EPP]. Since we have already seen that the Op feature may enter into Agree relations in our discussion of polarity items like NE *any* in §1.4.1, this suggestion has some independent plausibility. Of course, it is also possible that quantificational and negative objects were attracted by some other category than v, either from the fifteenth century (as suggested by van der Wurff (1997; 1999) and Ingham (2001; 2002)), or perhaps through ME and even in OE, as argued respectively by Kroch and Taylor (2000) and Pintzuk (2002). In that case v would have been [uφ, EPP] up to c1400 and the other category would have been [uOp, EPP] all along. Whichever of these analyses turns out to be correct, we can see that the antisymmetric approach, while conceptually more restrictive than the approach considered earlier, is also more flexible.

A further empirical advantage of the antisymmetric approach concerns the adjacency of the verb and direct object. To quote Kiparsky (1996: 173):

'[r]igid VO languages ... require adjacency of verb and object ... whereas rigid OV languages ... allow adverbs to intervene freely'. We can observe this difference in the history of English: the examples of OE and ME OV order in (65) and (78) all have material intervening between the object and the verb; on the other hand, in NE the verb must be adjacent to the direct object (as mentioned in §1.3.1). If OV order is derived by leftward-movement of the object as in (83), then it is quite conceivable that adverbial and other material may intervene between the target of this movement and VP. VO order, on the other hand, does not involve object-movement, and so, to the extent that the verb does not move, the adjacency created by merging these two elements will be undisturbed. This difference between OV and VO systems cannot be so readily captured if we assume that the relevant parameter concerns the merged order of object and verb.

What I have said about the antisymmetric approach so far might lead one to consider that it is potentially so fine-grained that it has no hope of capturing larger-scale implicational relations such as those behind parameters like F3 or F6. But in fact this is not the case. If we ally the antisymmetric approach to the idea that potential movement triggers, i.e. various (sub)classes of functional heads, tend to trigger or fail to trigger movement harmonically, then we can in fact begin to understand the implicational relations that we have seen. Thus, parameter F3 would be the option of leftward-movement of the complements of V and T, and parameter F6 would be the option of leftward-movement of many different types of complements. The tendency for 'head-initial' and 'head-final' patterns to hold across categories, as revealed by the typological work of Greenberg, J. Hawkins, and Dryer, would result from a preference for potential movement triggers to act together. We could perhaps restate J. Hawkins' (1983) generalization of cross-categorial harmony in the context of Kaynian antisymmetry as follows:

(84) There is a preference for the EPP feature of a functional head F to generalize to other functional heads G, H ...

The reason behind (84) may reside in a kind of 'meta-parameter' governing the parametric options of individual functional heads, perhaps in a notion of **markedness** of parametric systems or perhaps in the nature of the parameter-setting process, i.e. language acquisition. I will return to this question, which concerns the nature of the theory of parameters, in §3.4 and §3.5, and very tentatively propose a more precise version of (84). For now it suffices to note that the antisymmetric theory is both fine-grained enough to allow an

analysis of the differences between fourteenth and fifteenth-century English, and at the same time at least in principle to capture large-scale implicational relations. To quote Kiparsky once more, the antisymmetric theory 'would then predict ... that the mixed system of head-complement relations of Germanic would become uniform.' But Kiparsky goes on to point out, as we have already mentioned, that 'OV commonly changes to VO but the converse does not happen.' As things stand, what has been suggested here does not predict this; in §3.5, I will return to this point.

A potential problem with the antisymmetric approach is that it runs the risk of entailing a complication of the structure of the clause, as triggers and landing sites for movement need to be postulated. To the extent that these are postulated purely to account for leftward-moved complements, the approach is no better than the one which postulates parameters determining the linear order of merged elements; it simply shifts the locus of variation from Merge to Move. If, on the other hand, the movements and positions needed to derive head-final orders are independently required, then this point is not problematic.

A second problem concerns the specific proposal that OV order is derived by leftward-movement of objects. In true OV systems, all complements must precede V. At first sight, this may seem to imply that a whole host of movements and positions must be postulated in order to account for preverbal PPs, particles, adverbs, etc. Again, to the extent that the movements are postulated purely to derive the head-final surface order, the antisymmetric approach loses its advantage over other approaches.

An interesting way of handling this last problem has emerged in recent years. Following an initial proposal by Hinterhölzl (1997), various authors (Haegeman 2000; Hróarsdóttir 1999; Koopman and Szabolcsi 2000; Koster 2000; Biberauer 2003) have proposed what one might call a 'massive movement' analysis for West Germanic languages. The basic idea is that the Goal for leftward-movement may be contained in a larger category which is moved along with the Goal (thereby undergoing pied-piping) when EPP-driven movement takes place. So, for example, instead of the object alone being attracted by v*'s EPP feature, as in (83), the entire VP might move. This would give the structure in (83'):

(83') $[_v P \; [_{VP} \; V \; DP\text{-obj} \; v*_{[up, \; EPP]} \; (VP)]]$

In this structure, all VP-internal material in addition to the direct object is moved to the left of v*. But, also, as it stands, V moves too, and so OV

order is not derived. But suppose V independently raises to v* (Chomsky (2001: 35) assumes that this is a separate operation from verb-movement to T, object-movement, etc.), and then the 'remnant' VP moves to SpecvP. This will give the derived structure in (83''):

(83'') [$_{v*P}$ [$_{VP}$ (V) DP-obj] V+v*$_{[u\varphi,\ EPP]}$ (VP)]

Example (83'') gives the surface order where all V's complements precede V. Suppose we now iterate the pied-piping operation at the TP-level, i.e. we allow T to attract the entire vP to its Specifier (pied-piping the subject, with which T's [$u\varphi$] features Agree). This gives (85):

(85) [$_{TP}$ [$_{v*P}$ DP-subj [$_{v*P}$ [$_{VP}$ (V) DP-obj] V+v*$_{[u\varphi,\ EPP]}$ (VP)]] T (vP)]

If T is the category containing an auxiliary, then this sequence of operations will give us the surface word order *Obj–V–Aux*, which is the usual order found in subordinate clauses in West Germanic. Also, all other verbal complements will appear to the left of V and Aux.

    Let us illustrate this kind of derivation with (65c), which we repeat here:

(65c) ... forþon of Breotone **nædran** on scippe **lædde wæron**
        ... because from Britain adders on ships brought were
        ' ... because vipers were brought on ships from Britain'
        (Bede 30.1–2; Pintzuk 1991: 117)

The order in which the VP-constituents are merged is as in (86):[33]

(86) [$_{VP}$ lædde of Breotone nædran on scippe]

When VP is merged with v*, V raises to v* and VP to the Specv*P, giving (87):

(87) [$_{v*P}$ (lædde) of Breotone nædran on scippe] [$_{v*}$lædde v*[+EPP]] (VP)]

Next, the auxiliary *wæron* is merged in T and v*P moves to SpecTP. This gives the structure in (88):

(88) [$_{TP}$ [$_{v*P}$ (lædde) of Breotone nædran on scippe] [$_{v*}$ lædde v*] (VP)]
      [$_T$ wæron] (vP)]

Although this derivation appears rather complex, as long as the massive movements can be motivated, the approach has all the advantages of the antisymmetric approach to word-order variation and change which we

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[33] If Merge is binary, as stated in the Introduction, there must be further structure inside the VP. I leave this aside here. The important point is that all these elements, except V itself, move as a unit.

enumerated above.[34] In particular the loss of these massive movement operations involving vP and VP pied-piping plays a central role in the OV > VO change we have discussed here.

2.5.5. Conclusion

In this section, we have discussed three different approaches to word-order change: the typological approach advocated by Lehmann and Vennemann, the approach postulating variation in underlying head-complement order of van Kemenade and Lightfoot, and the 'antisymmetric' approach based on Kayne (1994). We have also mentioned the 'grammars in competition' idea, influentially advocated by Pintzuk (1991; 2002) and Kroch and A. Taylor (2000). We have also seen that the data are more complex than the simple statement that English changed from OV to VO might seem to imply, while this statement nevertheless contains an important kernel of truth (and there is no reason to doubt that the same applies to other languages which have undergone this change, some of them mentioned in §1.6.2). In particular, OV order and its implicational correlate VAux appear to have been incrementally lost in English, beginning probably in late OE, with the final disappearance of OV only taking place at the end of the fifteenth century. If language change is driven by language acquisition, this cannot be a single parameter change; instead we must view OV order as arising from the interaction of several parameters, which tend to act harmonically. It seems that the antisymmetric approach lends itself particularly well to this view of things, although it is not without problems.

From the foregoing discussion, we see that word-order change in English is somewhat more complex than previously thought, in that it involves several separate but related parameter changes (see Fischer *et al.* (2000: 172–3) for a clear statement of what the various stages may have been). On this view, there

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[34] We may further note that 'verb-projection raising' order as in (72b) and 'verb-raising' order as in (72a) can be straightforwardly derived by lack of vP-movement and object-movement instead of VP-movement respectively. In other words, these orders reflect movement of DP only to SpecTP and SpecvP, rather than pied-piping of vP and VP. We thus have a rather natural way of accounting for the *synchronic* variation in OE as a stable option of pied-piping vP or VP vs. 'stranding', i.e. movement of the DP Goal alone. This idea is developed in Biberauer and Roberts (2005a). We return to the question of optionality in §4.1.4.

is no simple OV/VO parameter, as different types of OV order are derived by different operations at different periods. This conclusion considerably refines our notion of 'word-order type' both synchronically and diachronically, and entails a J. Hawkins-esque notion of cross-categorial harmony, formulated in terms of the association of an EPP feature with different categories. An important conceptual advantage of word-order typology is thus retained, while the descriptive inadequacies of the 'traditional' OV/VO opposition are replaced by a more fine-grained analysis.

2.6. Conclusion to Chapter 2

The goal of this chapter was to illustrate the power and the utility of the notion of parametric change by showing how most of the principal kinds of syntactic change which have been discussed in the literature can be reduced to this mechanism. I have tried to show that reanalysis, grammaticalization, as well as changes in argument structure, complementation and word order, can all be understood in these terms. From here on, I will take it that this is the case; although there is much in the preceding two chapters that is open to debate, I maintain that they together constitute support for the thesis that the key notion for an understanding of diachronic syntax is that of parameter change. Furthermore, I follow Lightfoot (1979; 1991; 1998) in taking parameter change to be driven by language acquisition.

   The notion of parameter itself remains unformulated, although in this chapter we have introduced one or two important notions (notably P-expression and P-ambiguity). One of the principal goals of the next chapter is to arrive at a proper characterization of a parameter as a formal aspect of the theory of grammar.

Further reading

Reanalysis, abduction, and learnability

Andersen (1973) is the classic exposition of the concept of abductive reanalysis. The empirical focus of the article is not syntax but phonology: sound changes in various Czech dialects. The conceptual importance of abductive reanalysis for our general understanding of change is however

made very clear. **Timberlake (1977)** is a classic study of syntactic reanalysis, in which it is proposed that the effects of reanalysis may not manifest themselves in surface changes immediately. **Longobardi (2001)** deals with the development of the French preposition *chez* from the Latin noun *casa*. The Inertia Principle plays a major role in the analysis, and its nature and implications are discussed in some detail. We will look at the Inertia Principle in §3.2. **Bertolo (2001)** is a collection of articles all dealing with aspects of learnability in relation to principles-and-parameters theory. **Kroch (2000)** is an excellent survey of the issues and results in generative diachronic syntax.

V-to-T movement and the development of English auxiliaries

Warner (1983) is a thorough and highly critical review of Lightfoot (1979), calling into question many of the empirical claims made there concerning the historical development of English modal auxiliaries. **Warner (1993)** is a monograph on the development of the auxiliary system in general, with the analysis stated in terms of Head-Driven Phrase Structure Grammar (HPSG). **Denison (1985)** defends the idea that auxiliary *do* developed from an earlier raising/control verb, which had a bare-infinitive complement, an idea developed a little further in Roberts (1993a). **Roberts (1985)** reconsiders the reanalysis of the English modals as auxiliaries, first dealt with in Lightfoot (1979). This is also the first paper to clearly recognize that English has lost V-to-T movement and to attempt to relate this to impoverishment of verbal agreement inflection. **Lightfoot (2006)** takes up these points, following on from the discussion in Lightfoot (1999); this book also presents a recent restatement of Lightfoot's views on a range of matters. **Vikner (1997)** gives a clear and systematic statement of the correlation between V-to-T movement and agreement inflection, which he restricts to VO languages. **Alexiadou and Fanselow (2002)** argue that this correlation is not an aspect of grammar, but rather a contingent fact about diachrony. **Anderson (2002)** is another critique of the proposals in Vikner (1997); again, the thrust of the argument is that conditions directly relating agreement inflection to movement are somewhat implausible. **Bobaljik (2002)** also criticizes Vikner's proposals, mainly on empirical grounds. **Thráinsson (2003)** looks at ongoing change in Faroese regarding V-to-T movement and agreement morphology, arguing that these developments pose problems

for the proposed correlation between V-to-T movement and rich agreement. **Bobaljik and Thráinsson (1998)** propose a parameterized version of Pollock's (1989) split-Infl idea: some languages combine T and Agr features on a single head, others split them into two projections. The cue for the difference is, again, the richness of verbal agreement morphology.

The effects of the loss of dative case and the development of psychological predicates in English

Allen (1995) is a thorough and interesting discussion of the development of recipient passives and constructions involving psych verbs. It is arguably the most in-depth study of the syntactic effects of the loss of the morphological marking of inherent Case in English to date. **Bejar (2002)** looks at Allen's analysis of the changes in psych verbs from a minimalist perspective. **Eythórssen and Barðdal (2005)** survey the behaviour of 'quirky subjects' in a range of Germanic languages, and come to conclusions only slightly different from Allen's. **Lightfoot (1981)** was one of the earliest analyses of the effects of the loss of morphological dative case on English syntax. **Fischer and van der Leek (1983)** is in part a response to this, going into much greater empirical detail regarding the development of ME psych verbs. **Van der Gaaf (1904)** is the principal traditional study of the development of psych verbs in the history of English. **Belletti and Rizzi (1988)** is an influential analysis of psych verbs, mostly in Italian, in terms of government-binding theory. **Pesetsky (1994)** includes a very detailed study of NE psych verbs, breaking them up into a number of thematically-defined subclasses. **Baker, Johnson, and Roberts (1989)** is an influential analysis of passives using government-binding theory. **Collins (2005)** is the most thorough and interesting alternative account of passives, which develops an important idea concerning restrictions on the locality of movement in minimalism.

Grammaticalization

Bybee, Perkins, and Pagliuca (1994) is an major typologically-based survey of grammaticalization phenomena. **Heine *et al.* (1993); Heine, Claudi, and Hünnemeyer (1991); Heine and Kuteva (2002); Traugott and Heine (1991);** and **Heine and Reh (1984)** are all important collections of materials on

grammaticalization, again looked at from a functional-typological perspective. **C. Lehmann (1986; 1995)** provides useful overviews of the phenomena. **Haspelmath (1989)** presents an account of the development of infinitival markers from purposive conjunctions, relying on the functional-typological notion of grammaticalization. **Batllori et al. (2005)** is a recent collection of articles adopting a formal, mostly minimalist, approach to different kinds of grammaticalization phenomena. **Meillet (1912)** is a general paper on grammatical change. It is noteworthy for the first recorded use of the term 'grammaticalization' and for the claim that this, along with analogy, are the only mechanisms of grammatical change. **Bopp (1816)** was one of the first major treatises on comparative Indo-European grammar. Some of the ideas put forward prefigure more recent ideas about grammaticalization. **Hopper and Traugott (2003)** is the main textbook on grammaticalization. Again the focus is largely functional-typological. **Simpson and Wu (2001)** is an interesting formal account of grammaticalization in various East Asian languages. **Wu (2000)** is a formal treatment of a number of cases of grammaticalization in the history of Chinese. **Roberts and Roussou (1999)** is an early version of the later monograph on grammaticalization, in which the formal, minimalist-based approach is proposed (Roberts and Roussou 2003; see Further reading to Chapter 1).

Word-order change in English

Foster and van der Wurff (1997) study OV vs. VO orders in Late ME, with some very revealing quantitative results. **Moerenhut and van der Wurff (2000)** is another partly quantitative analysis of the incidence of OV orders of various kinds in ME. **Van der Wurff (1997; 1999)** and **van der Wurff and Foster (1997)** further investigate details of ME word order, supporting an antisymmetric approach and arguing that object-movement in Late ME was restricted to certain types of object. **Ingham (2001; 2002)** looks at the nature of the preverbal object in Late ME OV orders, showing clearly the preference for negative or quantified objects in this order. **Kroch and Taylor (2000)** argue that quantified objects move to a designated position throughout the ME period. **Pintzuk and Kroch (1989)** is an important early study of OE word order, in which the authors demonstrate that postverbal objects in subordinate clauses in *Beowulf* are always preceded by a metrical pause. They argue that this is consistent with the idea that such objects are

extraposed. **Roberts (1997)** proposed an 'antisymmetric' VO analysis of OE word order, suggesting that this has the advantage of allowing us to see the change from surface OV to VO as the loss of leftward object-movement rather than as a reanalysis of the base. **Biberauer (2003)** proposes an account of synchronic variation in Modern Spoken Afrikaans which makes use of massive movement and pied-piping options as sketched in §2.5.4. **Biberauer and Roberts (2005a)** apples these ideas to word-order variation and change in the history of English. **Stockwell (1977)** and **Stockwell and Minkova (1991)** are further studies of OE word order and ME word-order change, the former being one of the earliest generative analyses of OE. **Canale (1978)** is an early study of word-order change in ME. **Hiltunen (1983)** is another important early study.

Other work on the history and varieties of English

Denison (1993) is a comprehensive review of nearly all the major work on the historical syntax of English available at the time, very coherently organized into topical sections and with extremely useful commentary and bibliography. **Henry (1995)** is a detailed study of a number of syntactic peculiarities of the English of Belfast. Some of them, including the Northern Pronoun Rule, are shared by other regional varieties of English deriving from Northumbrian OE. **C. Jones (1997)** is a comprehensive survey of Scots English, with much useful historical material. **Los (1998)** looks at the rise of the *to*-infinitive in ME, arguing that it did not derive directly from an OE purposive, but had an earlier origin, with its distribution being enlarged during ME as it replaced subjunctive *that*-clauses in a number of contexts. **Jespersen (1909–49)** is a classic survey of the historical grammar of English. It remains the most comprehensive work of its kind. **Visser (1963–73)** is a very large compendium of syntactic constructions from all periods of English. Before the advent of electronic corpora, this was an invaluable tool, and it remains useful today.

Germanic syntax

Hinterhölzl (1997) deals with verb-raising and verb-projection raising in dialects of German. This was one of the first studies in which a 'massive

movement' analysis was proposed in order to account for this kind of phenomenon. **Koopman and Szabolcsi (2000)** develop and extend the massive-movement idea to a range of constructions including those involving preverbs in Hungarian. **Koster (2000)** invokes massive movement in the analysis of verb-raising in Dutch. **Wurmbard (2001)** is an analysis of verb-raising and related restructuring phenomena in German, in which it is argued that these 'clause-union' phenomena involve reduced complements, probably vPs. **Kiparsky (1995)** presents an intriguing reconstruction of clausal subordination in Indo-European, and a proposal for the development of finite complementizers in Germanic which relates this to the rise of V2. **Koster (1975)** is a classic article in which it is shown that the most economical analysis of Dutch V2 clauses involves generating the verb in final position and raising it to C. **Sigurðsson (1989)** is an important study of case marking and non-finite clauses in Icelandic. The major result is the evidence that PRO can bear dative case, contrary to a central tenet of government-binding theory. **Jonas (2002)** looks at various aspects of the syntax of Norn, the North Germanic language spoken on the Shetland Islands until the eighteenth century.

Latin and Romance syntax

Bolkestein (1979) provides detailed arguments that the Latin accusative + infinitive construction is not the same as English-style Exceptional Case-Marking. **Cecchetto and Oniga (2001)** develop Bolkestein's analysis further, adding more data and greater sophistication. **Sihler (1995)** is an important and very thorough historical grammar of Latin and Greek, clearly demonstrating the relations between these languages and Indo-European. **Vincent (1988)** is a very useful survey of the structure of Latin, with a thorough discussion of how Latin clausal complementation differs from that of the Modern Romance languages. **Woodcock (1959)** is a traditional grammar of Latin. **Perlmutter (1978)** was the first to observe the systematic differences in behaviour between unaccusative and unergative intransitives in Italian. He provided a detailed analysis of these and related constructions in terms of relational grammar. **Burzio (1986)** was the first in-depth study of unaccusatives and related constructions in government-binding theory. It also deals with a very wide range of constructions from Italian and its dialects. **Levin and Rappaport-Hovav (1995)** is the most thorough study of

unaccusativity in English to date, featuring very insightful analyses of a number of subsystems of the English lexicon. **Guasti (1991)** presents an analysis of the complements of causative and perception verbs in French and Italian in terms of a late version of government-binding theory. **Calabrese (1993)** develops an analysis of control and raising in Salentino, a Southern Italian dialect almost entirely lacking in infinitives. **Ledgeway (1998)** similarly studies these and related phenomena in the dialects of Southern Calabria and North-East Sicily, which appear to similarly lack infinitives. **Ledgeway (2000)** is the most detailed study of the syntax of Southern Italian dialects to date. **Rohlfs (1969)** is the classic traditional description of Italian dialects. **M. Jones (1996)** is probably the most comprehensive survey of Sardinian syntax in terms of generative grammar to date. **Kayne (1983)** is a classic treatment of 'complex inversion' in French. **Rizzi and Roberts (1989)** reanalyse French complex inversion, exploiting the VP-internal subject hypothesis in order to account for the presence of two realizations of the subject in this construction. **Roberts (1993b)** is an analysis of clitics and inversion in Franco-Provençal Valdôtain, a variety of Franco-Provençal spoken in the Val d'Aoste in North-Western Italy. **Kayne (2000)** is a collection of articles on universals, Romance syntax and English syntax, with an introduction in which, among other things, Kayne argues that the number of distinct grammatical systems currently extant is probably greater than the human population. **Wheeler (1988)** is a thorough survey of the history and structure of Occitan.

The structure of DPs

Bernstein (1991; 2001) present a general analysis of the structure of nominals across languages using the DP hypothesis and N-to-D movement. **Longobardi (1994)** is another major study of nominal syntax in terms of the DP hypothesis, in which N-to-D movement plays a central role. **Ritter (1991)** also looks at nominals in terms of the DP hypothesis and N-to-D movement. **Zamparelli (1995)** is another treatment of the internal structure of nominals, arguing in particular, and partly on semantic grounds, for a distinct functional projection from D to house certain types of quantifier.

French phonology

Dell (1985) remains the main study of French phonology, in terms of 'classic' generative phonology. **Pagliano (2003)** is a recent treatment of liaison in French, showing that the /t/ which appears in *a-t-il* and similar contexts is epenthetic, while the /t/ that appears with inverted verbs in the 3pl, as in *ont-ils*, is an instance of liaison and such may involve an underlying /t/. **Tranel (1981)** is another major study of French phonology.