

HEAD VERSUS DEPENDENT MARKING

The case of the clause

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1. Introduction

In the present paper¹ I wish to consider some of the implications of juxtaposing three strands of recent syntactic research that have tended to remain independent of each other.² Although there are undeniably differences of emphasis and occasionally of principle, it is part of the contention of this paper (a) that there is much to be gained from an attempt to bring them together, and (b) that there is less of real substance keeping them apart than is perhaps sometimes thought. The approaches in question are:

- (i) The line of typological research inaugurated by Nichols (1986), in particular her fundamental distinction between head-marking and dependent marking languages.
- (ii) The focus in the recent generative literature on the properties of functional categories and their projections (see e.g. Chomsky 1986, Abney 1987, Speas 1990 and a whole host of other references).
- (iii) The study of the processes of grammaticalization as a mechanism of syntactic change (see Hopper & Traugott, forthcoming, for a synthesis).

I will begin with a brief characterisation of each.

2. Head-marking vs dependent-marking

This typology assumes a theory-independent and cross-linguistic agreement as to which is the head and which the dependent in any given syntactic construction, and then classifies languages according to whether the head-dependent relation is marked on the head or the dependent. Thus, compare the following:

- | | | | |
|-----|----------------------|------------|--------------|
| (1) | Maltese ³ | bin Alla | 'son of God' |
| (2) | Latin | filius Dei | 'son of God' |

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¹ Some of the ideas in this paper were first worked out and given a public airing during a short stay in the Department of Linguistics, La Trobe University. I am grateful to Barry Blake for arranging this visit and to the British Council for contributing towards the costs. I have received useful comments, questions and advice from Peter Austin, Edith Bavin, Barry Blake and Kate Burridge. I have also benefitted from discussing questions of headedness, functional categories and constituent marking with Kersti Börjars and Linda Roberts.

² The reasons underlying the separateness of these three approaches would make an interesting study in the history and sociology of the discipline, though I will not essay such a task here.

³ For help with the Maltese data, which recur at various points in this paper, I am indebted to Albert Borg and Manwel Mifsud of the Institute of Linguistics in the University of Malta. It is interesting to note that whereas the two Semitic languages in Nichols' list, Arabic and Hebrew, come out as almost perfectly balanced between the two polar extremes of HM and DM - and are classified by Nichols as 'double marking', Maltese has a much larger number of head-marking properties. The consequence of this directionality of change - particularly in the light of prolonged contact with two dependent marking languages, Italian and English - deserves further study.

The Maltese noun *iben* 'son' has a special form *bin*, the so-called construct state, which is required when it has a nominal dependent. The dependent nominal *Alla* 'God' occurs in the same form as it would if it were an independent element. The marking of the possessive construction appears on the possessum, here regarded universally as the head, and the construction is therefore head-marked (HM). Conversely, in Latin it is the dependent *Dei* which signals its function by its changed form, being in the genitive case, and thus Latin is here dependent-marking (DM). Nichols (1986) demonstrates how, when languages are approached in the light of this distinction, they exhibit a clear tendency to fall consistently into one or other type across a wide range of constructions. A language which has a head-marked possessive construction, for example, can also be expected to show head-marking of other adnominal elements, in adpositional phrases and in clausal relations. She then goes on to explore some structural and diachronic implications of her typology, a number of which we shall return to below.

Beside the examples in (1) and (2) we may compare the Italian or English constructions in

(3):

(3)	Italian	figlio	di Dio
	English	son	of God

In such instances there is a separate element, the preposition *di* or *of*, whose function seems to be to mark the dependency. Nichols explicitly leaves such situations out of account, commenting: 'Languages of the isolating type will be left out of the discussion entirely - although their 'grammatical words', 'function words', 'empty words', etc. presumably also exhibit head-marking and dependent-marking tendencies' (1986: 59). By contrast, the grammar of functional categories has become central to recent debates within Government and Binding theory. Such developments can be expected to yield dividends when we come to consider the extension of Nichols' typology into the grammar of 'isolating' languages.

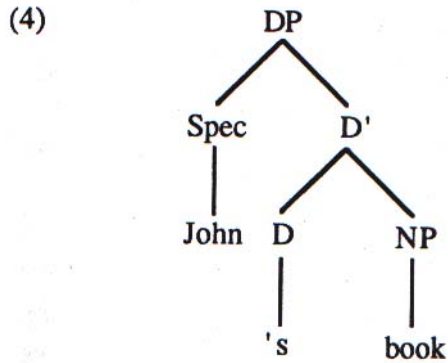
3. Functional categories

One of the principal motivations for the development of X-bar theory was to permit the expression of generalizations about the types of configurational structure that can be projected from a given category. In particular, there is an X' level which comprises the category X plus its complements and an X'' level which comprises the X' and a Specifier. Chomsky (1986), in a famously brief passage (cf Lightfoot 1990) proposed the extension of this system to include not only lexical (N, V, A, P) but also functional (COMP, INFL) categories. Since then there has been a veritable explosion of such functional projections (Pollock 1989 for TP, AGRP, NEGP; Chomsky 1989 for FP; Abney 1987 for DP; Laughren 1989 for KP, Rivero 1988 for ASPP, etc.)⁴ What these all have in common is that function words such as complementisers, auxiliaries and determiners now head their own projections and take maximal projections of lexical categories as complements instead of, as before, being the fillers of ancillary slots within lexical projections.

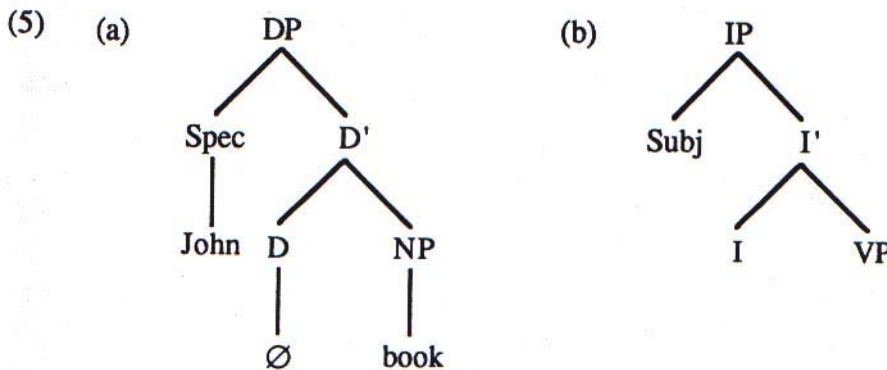
This new view of the syntax of functional categories greatly complicates - though we will argue below that it at the same time adds considerable interest to - the task of seeking to

⁴ It might be instructive to attempt a comprehensive survey of all the new projections that have been proposed in an attempt to see (a) what, if any, internal contradictions are generated; and (b) how much of the syntactic structure thereby generated is actually required. There is an undefended assumption in all this work that, once a new item or category is required by the syntax of a particular language, the appropriate way to encode it is via the constituency representations that X-bar imposes. In most instances I do not share this assumption, though I think it is most defensible for DET, COMP and INFL, the categories whose role and structure I explore in this paper. These other questions I will put on one side.

relate Nichols' dichotomy to the generative tradition of phrase structure building. On the old view, where NP = [N], and assuming that possessors are a kind of DET, it was a straightforward matter to express the head/dependent marking distinction exemplified in (1) and (2) in tree form, if so desired. This sort of automatic transfer from one theory to another is clearly what underlies Nichols' (1986: 57) remark that 'Linguists of divergent theoretical persuasions are in almost complete agreement as to what is the head and what is the non-head in a given construction'. Compare now one possible structure imposed within the DP hypothesis for a genitive construction in English (see Stowell 1989 for good discussion):



Here what Nichols would consider the dependent marking 's is the head of its own projection. There is a consequent need to re-assess the applicability of the HM/DM distinction to elaborated syntactic structure of the kind in (4). Note in passing that an alternative version of DP might be (5a), with a null D and s inserted as a case assigned by D, just as I assigns (nominative) Case to the subject in (5b).



As far as I can see, under either (4) or (5a) the English 's would count as a kind of head marking, exactly the opposite of the standard assumption of English possessives as instances of dependent marking. Conversely, a construct state would come out as a kind of dependent marking, since the possessum, which is now treated as an argument of the possessor, bears the phonological reflex of the syntactic construction.

We will not proceed further with this line of argument for the present but three lessons can already be drawn.

- (i) The extension of X-bar theory has considerably widened the gap between current phrase structure theory and the traditional assumptions of dependency that had been built into early theories of category projection. At the same time, the extra layers of syntactic structure have increased the range of analyses in principle possible for any

given set of data. Any attempt at comparing and reconciling Nichols' work and the generative tradition is thereby made both more complicated and, we shall argue, more feasible.

- (ii) The comfortable assumptions about head versus dependency which underpin Nichols' generalizations are rudely disturbed. We cannot establish heads and dependents by simple inspection but need to resort to more detailed, complex, often language-internal and sometimes theory-internal, argumentation.⁵
- (iii) We need to be clear about the criteria involved in deciding cases of headhood, since it is evident that Nichols' typology could, so to speak, be stood on its head if we were to adopt a different set of decisions as to what constitutes the head of any given construction. Conversely, of course, Nichols' impressive results may be taken as a strong argument in favour of the traditional values and may help us to decide in cases - such as the relation between complementizer and the accompanying clause - where traditional grammar is not clear.

The 'grammatical words' which have figured so prominently in recent generative work have also been the subject of intensive and original investigation, albeit from a very different direction and usually with very different methodological and metaphysical predilections, by scholars interested in the process of syntactic change known as 'grammaticalization', which we will now briefly consider.

4. Grammaticalization

The classic definition of this phenomenon is due to Meillet (1912): 'L'attribution d'un caractère grammatical à un mot jadis autonome'. Examples are legion: the evolution of the Latin noun *casa* 'house' into the French preposition *chez*, the shift of the English *do* from full verb to causative to carrier of tense and negation, the etymological source of the Gulf Arabic conjunction *yoom* 'when' in a noun meaning 'day' and so on. One of the concerns of recent work has been to show how there are recurrent cross-linguistic patterns whereby grammatical markers of a certain type are frequently found to have semantically similar sources. Thus, future auxiliaries often derive from verbs of motion: cf English *be going to*, French *aller*, Lango *binu* 'come' and 'future'; Lotuko (E. Nilotic) uses both *tuna* 'come' and *leten* 'go' as future auxiliaries. Similar studies have been carried out on the origin of conditional markers, complementizers, a variety of tense and aspect markers, articles etc (see Hopper & Traugott, forthcoming, for a valuable synthesis). There thus appear to be natural paths of syntactico-semantic development akin to the recurring dimensions of phonetic change first classified by historical linguists in the last century.

These paths of grammaticalization are often convergent. That is to say, one type of grammatical marker can be shown to come from a number of different sources. Thus, future markers - in addition to deriving from motion verbs - are also commonly descended from verbs of volition (Eng. *will*, Rumanian *voi* <Latin *velle* 'to wish', Greek *tha* < *thelo* 'I want', Swahili *-ta-* < *taka* 'want') and from expressions of obligation (French *-ai* <Latin *habere*

⁵ One might compare in this respect Greenberg-style generalisations about word order. In their original formulation they were (perhaps necessarily) couched in terms of crude, superficial grammatical categories. Subsequent work has taken these up and sought to reconcile them with the demands of more explicitly formulated theories - cf. amongst others Travis 1984, 1989; Hawkins 1982, 1983; Giorgi & Longobardi 1991. It does not of course follow that Greenberg and his colleagues would necessarily agree with the way their work has been interpreted within the generative tradition - see for example Croft 1990 (although curiously this work also omits any reference to Nichols' typology). The important point rather is that results and generalizations obtained within one approach can inform work in another. It is this same spirit of cross-paradigm reconciliation that underlies the present paper.

'have (to)', Sardinian *devere* 'future' <Latin *debere* 'must') - cf Fleischman 1983, Bybee & Pagliuca 1985.

In addition to raising the question of the semantic routes by which 'grammatical' or 'function' words arise, work on grammaticalization has made us aware of one significant fact, though it is not one that is generally stated explicitly, namely:

- (6) Function words are always etymologically derived from lexical words.

Let us consider the generalization in (6) in relation to the two approaches we have so far discussed.

4.1 As far as the HM/DM distinction is concerned, the problem is to determine the way in which changes of category may impinge upon the typological classification of the language or construction in question. Consider the case of complementizers which derive from verbs of saying (Lord 1976). At the ungrammaticalized stage we will have:

- (7) [VERB + SENTENCE]_{VP}

The whole will be a VP, of which - by common consent - the V is the head. If the verb becomes a complementizer, and if one believes in CPs, then it is reasonable to suppose that the VP becomes a CP. Grammaticalization has taken place and has changed the category of the construction but has not altered its head-dependent structure. If on the other hand a CP is thought of as being a kind of sentence (as the old S-bar notation implied), then grammaticalization would involve loss of head status, and might have different consequences for the typological classification of the language. Similar considerations arise when a lexical preposition such as Latin *de* 'down from, concerning' develops into a grammatical, case-assigning preposition such as French *de*, Italian *di*, etc.

4.2 From the GB perspective the problem is to decide on the proper characterization of languages without overt functional categories: e.g. Japanese, Russian with no articles, Latin with very limited use of complementizers. As long as X-bar theory is based solely on the properties [+/- N, +/- VI there is not really a problem of general applicability, since it is reasonable to take the noun/verb split to be universal (Schachter 1985). One solution, of course, is to maintain the universalist position by postulating empty C's and D's, but to many this will seem unduly Procrustean. Alternatively, the applicability of the concept 'head' will have to be relativised to language type: some languages will have a functional head system and some will not. This latter conclusion is defended in Fukui & Speas (1986), for example, where it is argued that Japanese does not have functional projections. Vincent (1989) made a similar suggestion for Latin, thus seeing the historical evolution of COMP, DET and INFL items in Romance as a linked set of changes due to the emergence of a functional head system.

4.3 Another issue of importance which emerges via the study of grammaticalization is the status of morphological elements. A common subsequent stage in grammatical evolution is from independent function word to bound morpheme: e.g. the French future markers *-ai*, *-as*, *-a*, which derive from Latin *habeo*, *habes*, *habet* (cf. French *j'ai*, *tu as*, *il a*). A normal intervening stage here would involve cliticization. If headhood can be retained even after grammaticalization, as we hinted in the case of VP > CP, can it be retained even after morphologization?

Put another way, can a morpheme be the head of a construction? On this issue constituency and dependency grammarians seem for the most part to be diametrically opposed. Hudson is quite explicit, within his *Word Grammar*, about denying syntactic statements access to the internal structure of the word, as is Miller (forthcoming).

Within the generative tradition, by contrast, morphemes are standardly taken to be the heads of words (cf Scalise 1988 for a review), though views vary as to the accessibility of these items to grammatical processes (cf. Speas 1990: 240ff for some discussion - henceforth we will follow Speas in referring to the view that morphemes are not accessible to syntax as the Lexical Integrity Hypothesis (LIH)). For Nichols, morphemes are largely treated as markers of the head-dependent relation rather than as members of it so the question does not directly arise. Commonly noted (though still putative) equivalences such as that between adpositions and case markers (or less commonly between case markers and complementizers - cf Simpson 1988) suggest that these issues may be more complex than a simple 'yes' or 'no', and that the historical perspective may add an important though largely overlooked dimension to the question.

So far in this paper I have sought to set out positions and identify issues. In what follows I will focus on one particular question, namely that of clausal marking, and try to show how the three approaches I have identified can be, if not totally reconciled, at least brought together to contribute to a broader understanding of the problem. The data will be mostly from Latin, a DM language with very little in the way of (overt) functional categories; Italian, a DM language with a well developed system of functional projections, and Maltese, a language tending towards HM and with some functional structure. I will also cast the occasional sideways glance at a number of Australian languages, drawing on data discussed by the contributors to Austin (1988) and on the treatment of the HM Amerindian language Lakhota outlined in Van Vain (1985).

5. Complementizers and the DM/HM dichotomy

Generative grammar and the HM/DM distinction offer a useful complementarity of perspectives from which to examine the structure of the clause, and in particular the nature and role of the complementizer within the clause. In dependency terms, a verb and its sentential argument constitute a head-modifier dyad just as a verb and a nominal argument do. And indeed in some languages, the marking is identical in that the verb of the sentential argument may bear a case suffix directly (cf. Evans 1988; Dench & Evans 1988; Simpson 1988). We will return to the complementizing function of nominal case in section 7 below. More commonly, though, the sentential argument is preceded or followed by an item whose principal function is to mark the clause as embedded, a so-called complementizer. It is easy to show by standard tests (cf. Bresnan 1974) that the complementizer forms a constituent with its clause. From this it follows that an example such as (8) exhibits dependent-marking:

- (8) Fred [^H believes D[^Mthat [the earth is flat]]]
 (H = head, D = dependent, M = marking)

Indeed, as Nichols notes, 'canonical subordination is a consequence of the choice of dependent-marking strategies' (1986: 64).

Whereas the HM/DM approach naturally asks about the role of the complementizer vis-à-vis the verb (or adjective, noun or preposition) which is its governor, the generative tradition has been more concerned about its status within the clause to which it is attached, and has recently espoused the view that it is the head of its own dependency dyad,⁶ viz.:

- (9) [CIP]_{CP}
 (where IP = the old S: see below)

⁶ The view that the complementizer (or conjunction in older terminology) is head of the clause to which it attaches is not unique to generative work. Indeed, it seems to be essential to adopt this view in any strict dependency approach (cf Hudson 1987 and Miller, this conference).

Synthesizing the two approaches is not difficult: C is the head of its own dyad but at the same time is the marker of the dependency of that dyad on an external head. In other words, Nichols' approach requires three primitives - Head, Dependent and Marking - and the same item or morpheme may fulfil more than one of these roles. However, this situation does not arise in Nichols' original paper, as we have noted, for two accidental reasons: she assumed a version of what we called above the Lexical Integrity Hypothesis; and second she more or less arbitrarily excluded function words from her initial consideration. Yet, neither of these restrictions is crucial. The LIH has various forms, one of which - argued for by Speas (1990) - is that it holds for derivation but not for inflection. Nichols' position is perfectly consistent with such a variant. The extension of the HM/DM typology to function words is an empirical matter, and one which the present paper attempts to begin to address.

6. Predictions of CP within a HM/DM approach

It is one thing to show that the HM/DM approach and that of generative grammar can be reconciled. The more interesting question is whether there is anything to be gained by such a move. I will argue that there are indeed positive consequences here and that the gain is reciprocal. Let us consider things from the HM/DM perspective first. Once Nichols has established the existence of the HM/DM opposition she goes on to extract a number of generalizations. One, is that HM languages seem to preponderate among the languages of the world, and that this is - or ought to be - unwelcome news to the GB model, which in its insistence on notions such as government and Case (with a capital C!) appears to perpetuate traditional assumptions about the naturalness of DM. This criticism will be to some degree defused if we can show that some aspects of GB provide a framework within which Nichols' generalizations can find a more detailed articulation.

A second point is that, within this general preference for HM, there are types of construction which are preferentially HM or DM. In particular, she notes (1986: 75ff) on the one hand that the grammar of the clause inherently favours head-marking and on the other that embedded sentences tend to be dependent marked. Sentential complementation is of interest not least because it falls at the point of convergence of these two claims. If, as seems natural, we treat a sentential complement as an argument, then we might expect it to be marked preferentially on the governing verb. However, the mere fact of its being sentential would lead us to anticipate dependent-marking. Now I have not yet done extensive cross-linguistic testing but my impression from reading grammatical descriptions is that the sentential property wins out (unless the complement involves a nominalised verb form - cf section 7). This is most obviously revealed in the widespread occurrence of complementizers in languages which are otherwise strongly HM (cf for example the discussion of Lakhota in Van Valin 1985).⁷

At the same time, if the grammar of the clause is inherently likely to be HM, then the view that C is head of CP makes a number of further properties fall neatly into place. What Nichols means by clause is the combination of a verb and its arguments. Since the CP is a larger unit of a generally clausal type, we might also expect it to show HM effects, as indeed it does. The following is a preliminary list of some complementizer related phenomena which can be argued to fall under the rubric of HM.

⁷ Another possibility might be that even in a language which head-marks arguments of the clause this marking would not be triggered by the presence of a clausal argument. The latter point is difficult to investigate, however, since the expected marking in such circumstances would be that appropriate to a 3rd person singular object, and this is commonly zero (cf Lakhota, Abkhaz). In certain circumstances Navajo has overt marking for 3rd person singular objects and in those instances, as far as I have been able to determine, the presence of a sentential argument is morphologically signalled. We discuss the question of HM patterns of complementation in a little more detail below (section 8).

6.1 The finiteness of the complement clause

The distinction between finite and non-finite clauses is a type of DM effect: the form of the clause signals its dependency on a controlling verb. The location of the marker of finiteness may on the other hand be taken as a diagnostic of the head. Now, classically, of course, finiteness is identified on the verb form, but it is also indexed on the complementizer in a number of instances. Thus, English *that* is always accompanied by a finite verb. The finiteness of the clause is signalled both on the verb and in the choice of complementizer, a type of double marking. In some languages the choice is not between an element and zero; rather, finite and non-finite verbs have their own distinct complementizers, as in the Romance languages. These all have a descendant of Latin *quid/quod/quia* as the basic complementizer for finite clauses and a prepositional item - e.g. Italian *a* or *di* - with non-finite clauses. Thus:

- (10) Italian
- a) dice che non has capito
he-says COMP NEG you-have understood
'He says you have not understood'
- b) dice di non aver capito
he-says COMP NEG have- INF understood
'He says that he has not understood'

Contrast this with the behaviour of the Swedish element *att* which introduces both finite and non-finite clauses so that the marking rests entirely on the V (or I) position (see Börjars 1987). Conversely, in Maltese the verb form never changes but whether we have the equivalent of finite or non-finite in other languages depends on the presence of the complementizer. Thus:

- (11) Maltese
- a) ix-xhud qal li kienet ix-xita
the-witness said COMP was the-rain
'The witness said it was raining'
- b) beth jimxi
he-began he-walks
'He began to walk'

(11a) would be ungrammatical without the complementizer *li*, and (11b) would be ungrammatical with it. The verb form *jimxi* 'he walks' is the same as would be used in an independent main clause.

All the foregoing examples attest to the fact that finiteness may be marked at the C position, on the main verb (or in I position) or by some combination of the two.

6.2 Mood

Closely related to finiteness is mood, and again when it shows up in the form of a separate set of verb inflections as in the subjunctives of many Indo-European languages, it appears to be a clear DM phenomena (Cf Nichols 1986: 64). There are however instances where the complementizer may also vary according to the mood. Calabrese (1988) discusses one such case in the dialects of the Salentino area of Southern Italy. These dialects - probably under Greek influence - have lost many of the uses of the Latin infinitive that survive, and indeed are extended, elsewhere in the Romance area. Instead they have a distinction between two complementizers: *ku* < Latin *quod* and *ka* < Latin *quia*. Calabrese sums up the distribution as follows:

'...*ka* behaves like the complementizers *che* of Italian or *that* of English ...*ku* is used to introduce the clausal complement of a verb that requires this clausal complement to be infinitival in a language like Italian if its subject is understood to be identical to an argument of the main clause', and '...*ku* introduces the clauses which, in a language like

Italian, typically require the subjunctive mood if their subject is not identical to an argument of the matrix’.

What in other dialects involves an alternation at V or I here involves a choice at C, as would be expected if C is itself both a head and a marker of dependency.

6.3 Polarity

Another property that is commonly marked on the complementizer is negation. Two possibilities exist: (a) a special negative complementizer or (b) a negative element incorporated into the complementizer position. A residue of the latter is to be found in the etymology of English *than* from *that + not*. Interestingly, for the same function of marking a comparative clause other varieties of English use *nor*. Contrast this with the situation in a number of Romance languages where comparatives have the same complementiser as in other types of embedding, but where there is sentence internal pleonastic negation:

- (12) French Jean est plus riche que nous n’avions pensé
 ‘John is richer than we thought’

Other languages with such elements are Welsh (cf Borsley 1986) and possibly Maltese. The unmarked complementizer in Maltese is *li*, which is found not only in relatives and with verbal complements, but is also used after prepositions when the latter take sentential arguments. Thus:

- (13) Maltese wara li telqu
 after COMP they-left
 ‘after they left’

One may compare in this respect French *après que*, *sans que*, etc. Some prepositions, however, instead of *li*, take *ma* (cf Sutcliffe 1936: 207): *qabel* ‘before’, *bla* ‘without’, *minnghajr* ‘without’, *bhalma* ‘as’. Thus, beside (13) we find:

- (14) Maltese qabel ma tequ
 before COMP they-left
 ‘before they left’

With the exception of *bhalma* ‘as’, for which a different explanation is possible,⁸ it is striking that the corresponding prepositions in French take the same pleonastic negation as in the comparatives:

- (15) French avant que Pierre ne vienne
 before COMP Peter NEG come- SUBJ
 ‘before Peter comes’

Furthermore just as the French negative in these contexts is not completed with the particle *pas*, so in Maltese the verbal negation which usually involves a prefixed *ma* and a suffix *-x*: (e.g. *ma telqux* ‘they did not leave’) is here found without *-x*. Note too that etymologically the negative suffix *-x* in Maltese is a reduced form of the noun *xejn* ‘thing’ just as the French negative particles *pas*, etc are reduced forms of Latin nouns with originally emphatic function. We might speculate therefore that the reinforcing function of these items was not appropriate in certain kinds of adjunct and hence their synchronic absence. Be that as it may, the parallelisms between these two cases are quite remarkable, and make the point that what in one language may be marked within the clause may in other languages be signalled on the

⁸ In its complementising function, *ma* has a wider distribution than indicated here - see Sutcliffe 1936: 183. There seems to be a convergence of two different elements, one a negative and one a relative pronoun, but more thorough historical investigation than I have been able to undertake may show some connection.

complementizer. Moreover, the difference here parallels other differences between the two languages in that French is basically DM whereas Maltese shows a lot of HM properties.

6.4 Arguments of the complement clause

In a number of varieties of Arabic, including the classical language, a marker coreferential to the

subject of the complement is cliticised to the complementizer. Thus in the Gulf Arabic example (16):⁹

(16) Gulf Arabic fakkart inn-ak bitijji
 I-thought COMP-2PSOBJ 2PSSUBJ -come
 ‘I thought that you would come’

Note that in this example we have not simply got cliticization of the subject onto the complementizer. The suffix *-ak* is the same as that used to form a clitic object of a finite verb, so that we have genuine marking of one of the arguments of the clause on the complementizer. An alternative pattern attested in Levantine Arabic exhibits a third person singular pronoun attached to the complementizer, apparently as a kind of cataphoric reference to the succeeding clause.

Thus:

(17) Levantine Arabic fakkart inn-uh bitijji
 I-thought COMP-3PSOBJ 2PSSUBJ -come
 ‘I thought that you would come’

Here the clausal argument in its entirety is marked on the head exactly as in the case of the more familiar instances of verbs being marked for their dependents.

6.5 Wh-movement

It is tempting to see *wh*-movement as a special case of an element of the clause appearing in complementizer position, and thus as a kind of head marking, particularly in view of the frequency with which complementizers are derived historically from *wh*-words. Two difficulties attend a direct interpretation of *wh*-movement in this vein. First, under the CP hypothesis, the *wh*-word moves to Spec of C rather than to C; second, in a number of languages *wh*-movement is to the left even though the complementizer position is sentence final. It is certainly not impossible that these difficulties can be removed with further analysis. For the moment, however, we leave it an open question as to whether it might not be possible to motivate the existence of *wh*-movement phenomena in the attested cross-linguistic preference for HM in clause level constructions.

6.6 Head-to-head movement

In discussing the marking of finiteness and mood in sections 6.1, 6.2 above, we noted the relations between marking at the complementizer position and marking at the verb or auxiliary (INFL) position. Properties of this kind have been studied within GB under the rubric of head- to-head movement. A classic example is the analysis of the distribution of English auxiliaries as involving a rule of I-to-C movement (cf Pollock 1989). Similar sorts of data have also been adduced in the treatment of verb-second effects in Germanic and earlier stages of the Romance languages - see the contributions to Battye & Roberts (forthcoming). The movement aspects of these analyses are probably not crucial, but the data analysed

⁹ I owe this example to Clive Holes, to whom I am also grateful for discussion of this phenomenon more generally.

provide further support for the view that there are two related head positions in a clause, C and I. The unified analysis in GB can find a unified explanation in the HM/DM distinction.

6.7 Summary

The phenomena surveyed in sections 6.1 to 6.6 constitute areas in which recent generative work has made considerable progress. Many of the issues that arise bring with them complex and to some extent theory-bound argumentation, but it may be that we have gone as far as we can in theory-neutral terms. The Zwicky-Hudson debate in *Journal of Linguistics* was for the most part conducted theory-neutrally, and served very well to clear the ground for future discussions.

The next stage is to try and see to what extent the insights of one theory or approach can be reconciled with those of others.

7. Complementizing case

Given that complements are arguments of their governing verbs, it is not surprising to find that in many (most?) languages there is the possibility of a nominalised verb form in the complement as in English *I like swimming*. If NPs in such a language also inflect for case, we should in turn expect the possibility of case-marked nominalizations serving as complements. Such a phenomenon is not unknown in Indo-European (cf. the Latin supine), but it is especially well developed in a number of Australian languages (see the contributions to Austin 1988, particularly Simpson 1988, and also Dench & Evans 1988). The following is a simple example from Simpson 1988: 212 (= her (18)):

- (18) Waripiri yula-nja-ku jati-jarri-ja
 cry- NOM-PURP start- INCH-PAST
 ‘She burst into tears’ (lit, started to cry)

Note that the Purposive marker -ku is identical to the Dative case suffix, something which is reminiscent of the general tendency for purpose clauses to be expressed by datives or directional prepositions (cf English *to*, French *a* to name two well tried examples). Perhaps more striking are the instances where this same phenomenon is found but the verb form shows no other evidence of nominalisation. In the following Kayardild example from Evans (1988: 229, his (22)), the finite verb *thaa-thuu-nth* ‘will return’ bears the ‘oblique’ suffix (labelled here COBL for ‘complementizing oblique’). Moreover, the argument of that verb and the modifier of the argument agree and take the same suffix, which is therefore distributed over every word of the clause:

- (19) Kayardild ngada mummurdawa-th
 I NOM be glad-ACT
 [ngijin-inja thabuju-ntha thaa-thuu-nth]_{COBL}
 my-COBL brother- COBL return-FUT- COBL
 ‘I am glad that my brother is coming back’

The issue that concerns us here is the status of these case markers. Both Evans and Simpson are surely right in claiming that case suffixes and complementizing suffixes are the same morphological elements rather than homophonous ones, and case is of course the classic form of dependent marking. The question is: are these cases (and by extension all nominal cases) also to be seen as heads of their phrases? If so, they would then parallel the standard treatment of the adpositions which exercise the same or similar functions in ‘analytic’ languages. This analysis would entail a relaxing of the strongest form of the Lexical Integrity Hypothesis, though it would be compatible with a weaker version such as that espoused by Speas (1990) to the effect that syntactic generalizations may refer to inflectional but not derivational morphology. There is not space here to explore all the implications of these

constructions, but it is clear that the phenomenon of ‘complementizing case’ provides an important new angle on the question not only of what is the head of the CP but also of the NP/DP/KP.¹⁰ (See section 9 below for some further discussion of this question.)

8. HM complement strategies

So far we have discussed patterns of complementation that can be classified as DM. It is natural to ask what kinds of strategy would count as HM. One obvious possibility is that the governing verb is marked with an affix or clitic to indicate the presence of sentential complement (cf. however footnote 7). In such circumstances it is not uncommon to have a complementizer present as well, so that what we have is technically double marking rather than pure head marking. A slightly more complex case is attested in Maltese and some other Semitic languages, where the subject of the complement clause is marked with a clitic on the head verb. Thus, compare (20a, b) (Sutcliffe 1936: 166):

- | | | | | | |
|------|---------|-----|-----------------------|------|---------------|
| (20) | Maltese | (a) | irrid-kom | | taqraw |
| | | | 1PSSUBJ-want-2PPL OBJ | | 2PPLSUBJ-read |
| | | | ‘I want you to read’ | | |
| | | (b) | irrid | li | taqraw |
| | | | 1PSSUBJ-want | COMP | 2PPLSUBJ-read |
| | | | ‘I want you to read’ | | |

In (20a) there are two finite verbs, the first of which bears a second person plural object suffix (cf. *qasamkom* ‘he broke you (pl)’) and no complementizer is possible. In (20b), the first finite verb, *irrid* ‘I want’, does not have the pronominal suffix and the complementizer is obligatory. While (20b) looks like a classic instance of a complement dependent-marked by the complementizer, (20a) is pure HM. That is to say there is no change of verb form nor any function word; the presence of the dependent is signalled solely by the affix on the head. There is an interesting parallelism here with the pattern of Lakhota complementation described in Van Valin (1985: 387ff), though the complementizer is optionally present in the Lakhota equivalent of the Maltese pattern (20a).

The type of Maltese pattern described above is in one respect akin to what is found with so-called ‘Raising’ verbs in English, namely the subject of the subordinate verb is apparently encoded as the object of the main verb. Of course, there is at the same time a major difference:

the subordinate verb in the Maltese example (and also in the Lakhota examples Van Valin describes) is finite rather than non-finite. A corollary of this is that the second person plural is marked twice in example (20a), once as the object of *irrid* and once as the subject of *taqraw*. Classical raising is thus a double marking strategy: the ‘raised’ object is an HM property and the infinitive verb is a DM¹¹ property. On this view, we can also derive an account of the

¹⁰ One possible solution would be to follow Szabolsci (1989) in suggesting that D in the nominal corresponds to C in the sentence while case corresponds to Infl. This however would imply that the case phrase 0(P) is an argument of D, which conflicts with the idea of case and adpositions being in some sense equivalent, an idea which requires DP to be an argument of P. (See also note 13.)

¹¹ It should be noted that this account requires us to accept an analysis whereby *her* in *I believe her to be a genius* is indeed the object of *believe*, as would be the case in the original raising analysis of Rosenbaum (1967) and Postal (1974) or in the LFG account of Bresnan (1982). I believe that there are independently grounds for preferring such an analysis over the one involving Exceptional Case Marking which is standard within GB, but it would take us too far from the point to go into this matter here (see Vincent, in prep.). It is also important to keep English ‘Raising’ distinct from the accusative and infinitive constructions of the classical languages (cf. for Latin, Vincent 1990 and for Greek, Philippaki-Warbuton & Catsimali 1990).

unusual (i.e. ‘marked’ in the other sense!) nature of ‘Raising’ in English, since such a pattern has two exceptional properties: (i) it is an HM strategy in an otherwise DM language, and (ii) it is an FIM strategy in a preferentially DM construction.

9. C in relation to other functional categories

Having established the utility of C as head of CP in the light of both generative approaches and the HMIDM distinction, it is natural to ask what other categories C relates to, and therefore whether our argumentation can be extended beyond the domain of the clause. A number of generalizations both synchronic and diachronic suggest a close link between complementizers and pronouns. Thus, English *that* in its complementizing function is historically derived from the demonstrative pronoun. Indeed, Noonan (1985) asserts that pronouns cross-linguistically provide the most common etymological source of complementizers.¹² In other languages, complementizers overlap with articles (cf Lakhota as reported by Van Valin 1985). But of course articles commonly overlap with pronouns too: English *the* is also historically from the same source as *that*, and in the majority of the Romance languages, the articles and clitic pronouns are linked developments from the distal deictic *ille*. These morphological overlaps between pronouns and determiners are part of the argument behind what has come to be known as the DP-hypothesis (cf Abney 1987, Stowell 1989 and see Lyons 1977: 392 and §11.4 for an adumbration of the same line of thought), which in turn is linked to the CP-hypothesis via the principles of X-bar as extended to functional categories (Fukui & Speas 1986, Speas 1990). An intriguing question, though one that there is not space to follow up here, is the extent to which the role of D may be construed in HM/DM terms as we have suggested is appropriate in the case of C. There is certainly some evidence in favour of the view that D is the slot where categories of the DP may be signalled (e.g. case in Germanic and number and gender in Romance) when they are not marked on the noun.¹³ It is also argued in Vincent (1989) that the co-emergence of the categories D and C in Romance is a linked development of a ‘natural class’ of changes.

Other historical sources of complementizers are verbs and preposition/conjunctions.¹⁴ The case of verbs we have already touched on, noting that while there may be the kind of semantic ‘bleaching’ familiar from other instances of grammaticalization, there is preservation of headhood: V changes to C and therefore VP changes to CP. With prepositions we also get semantic bleaching as in the development of the Romance non-finite complementizers exemplified in French *à* and *de* from Latin *ad* ‘to’ and *de* ‘concerning, down from’ (Vincent 1990). Borsley (1986) discusses a different sort of prepositional complementizer in Welsh. There is a clear intuitive connection between the roles of prepositions and cases, and it is worthy of note that prepositions seem more commonly to be

¹² Sometimes the pronoun in question is a wh-word, as in the case of the Romance complementizers *que*, *che*, etc. and as in English *who*, *which* (cf also section 6.3). We will leave for another occasion the full exploration of the implications of these morphological overlaps.

¹³ There is some debate within the GB literature as to whether the sentential analogue of DP is IP or CP (cf Szabolsci 1989). The historical arguments seem to favour CP, as we have argued in the text, though instances of D evolving into I might be found in the way etymological pronouns have taken on copular functions in Semitic or in the development of pronominal clusters into ‘auxiliaries’ in some Australian languages (cf Bowe 1990: 62-65 for discussion). The matter however deserves more detailed discussion than we are able to give it here.

¹⁴ We accept the arguments of Jackendoff (1973) and Emonds (1976) that prepositions and conjunctions are part of a single grammatical category. For explicit argumentation linking these to complementizers, see Vincent (1980), Emonds (1985: Ch 7).

linked to subordinating conjunctions than to complementizers of argument clauses (and indeed, as in our Maltese and French examples above, often co-occur with them). This provides an interesting parallel to the observation in Simpson (1988: 212) that: 'most clauses with complementiser suffixes do not represent clausal arguments. They normally represent adjuncts. In this they resemble LOCATIVE case-suffixes'. As we noted in section 7, there is much that remains to be worked out in the relation between CP and DP and between CF and PP (and KP). It seems clear however that the triple focus of generative grammar, the HM/DM distinction and grammaticalization will offer a fuller account than could be achieved by any one of these alone.

10. Conclusion

Much of this paper has been preliminary and tentative, suggesting links and parallels rather than new analyses and extensive theoretical argumentation, and raising at least as many questions as are answered. While it is not possible to agree with Nichols' optimistic assertion that 'Linguists of divergent theoretical persuasions are in almost complete agreement as to what is the head and what is the non-head in a given construction' (1986: 57), it is possible to see the phenomenon of heads as an important area of convergence in syntactic theorising, and one where the juxtaposition of different approaches offers the opportunity of new and fruitful syntheses.

REFERENCES

- Abney, Steven. 1987. *The Noun Phrase in its sentential aspect*. Ph.D. dissertation. MIT.
- Austin, Peter. 1988 (ed.) *Complex sentence constructions in Australian languages*. Amsterdam & Philadelphia: John Benjamins.
- Baltin, Mark R. & Anthony S. Kroch (eds). 1989. *Alternative conceptions of phrase structure*. Chicago & London: University of Chicago Press.
- Battye, Adrian & Ian Roberts (eds). Forthcoming. *Proceedings of the First Conference on Diachronic Generative Syntax, University of York, April 1990*. New York: Oxford University Press.
- Börjars, Kersti. 1987. *Raising constructions in Swedish*. Unpublished M.A. dissertation, University of Manchester.
- Borsley, Robert. 1986. Prepositional complementizers in Welsh. *JL* 22.67-84.
- Bowe, Heather J. 1990. *Categories, constituents and constituent order in Pitjantjatjara*. London: Routledge.
- Bresnan, Joan. 1974. The position of certain clause particles in phrase structure. *Li* 5.614-619.
- Bresnan, Joan. 1982. Control and complementation. *LI* 13.343-434.
- Bybee, Joan & William Pagliuca. 1985. The evolution of future meaning. In Anna Giacalone Ramat et al (eds), *Proceedings of the Seventh international Conference on Historical Linguistics*. Amsterdam & Philadelphia: John Benjamins. 108-122.
- Calabrese, Andrea. 1988. The lack of infinitival clauses in Salentino: a synchronic analysis. In C. Laeufer & T. A. Morgan (eds) *Proceedings of the XIX Linguistic Symposium on Romance Languages*. Amsterdam & Philadelphia: John Benjamins.
- Chomsky, Noam. 1986. *Barriers*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1989. Some notes on economy of derivation and representation. *MIT Working Papers in Linguistics*. 10.43-74.
- Croft, William A. 1990. *Typology and universals*. Cambridge: Cambridge University Press.
- Dench, Alan & Nicholas Evans. 1988. Multiple case-marking in Australian languages. *Australian Journal of Linguistics* 8.1-47.
- Emonds, Joseph E. 1976. *A transformational approach to English syntax*. New York & London: Academic Pi
- Emonds, Joseph E. 1985. *A unified theory of syntactic categories*. Dordrecht: Foris.
- Evans, Nicholas. 1988. Odd topic marking in Kayardild. In Austin 1988.219-266.
- Fleischman, Suzanne. 1983. From pragmatics to grammar: diachronic reflections on complex pasts and futures in Romance. *Lingua* 60.183-214.
- Fukui & Speas, Margaret. 1986. Specifiers and projection. *MIT Working Papers in Linguistics* 8. 128-172.
- Giorgi, Alessandra & Giuseppe Longobardi. 1991. *The structure of the Noun Phrase*. Cambridge: Cambridge University Press.
- Hawkins, John A. 1982. Notes on Cross Category Harmony, X-bar and the predictions of markedness. *JL* 18.1-35.
- Hawkins, John A. 1983. *Word order universals*. New York: Academic Press.
- Hopper, Paul & Elizabeth Traugott. Forthcoming. *Grammaticalization*. Cambridge: Cambridge University Press.
- Hudson, Richard A. 1987. Zwicky on heads. *JL* 23.
- Jackendoff, Ray S. 1973. The base rules for prepositional phrases. In S. Anderson & P. Kiparsky (eds), *A festschrift for Morris Halle*. New York: Holt, Rinehart & Winston. 345-356

- Laughren, Mary. 1989. The configurationality parameter and Waripiri. In L. Maracz & P. Muysken (eds), *Configurationality*. Dordrecht: Foris.
- Lightfoot, David W. 1990. Old heads and new heads. In Joan Mascarô & Marina Nespor (eds), *Grammar in progress*. Dordrecht: Foris. 317-322.
- Lyons, John. 1977. *Semantics 1 & 2*. Cambridge: Cambridge University Press.
- Lord, Carol. 1976. Evidence for syntactic reanalysis: from verb to complementizer in Kwa. In S.B. Steever et al (eds), *Papers from the parasession on diachronic syntax*. Chicago: Chicago Linguistic Society. 179-191.
- Meillet, Antoine. 1912. L'évolution des formes grammaticales. Reprinted in Meillet, *Linguistique historique et linguistique générale*. Paris: Klincksieck, 1922.130-148.
- Nichols, Johanna. 1986. Head-marking and dependent-marking grammar. *Lg.* 62.56-119.
- Noonan, Michael. 1985. Complementation. In Shopen 1985, Vol.11.
- Philippaki-Warbuton, Irene & Georgia Catsimali. 1990. On the theory of control and raising in Ancient Greek: implications for the definition of subject. Unpublished paper, University of Reading.
- Pollock, Jean-Yves. 1989. Verb movement, universal grammar and the structure of IP. *LI* 20.365-424
- Postal, Paul M. 1974. *On raising*. Cambridge, MA: MIT Press.
- Rivero, Maria-Luisa. 1988. The structure of IP and V-movement in the languages of the Balkans. Unpublished paper, University of Ottawa.
- Rosenbaum, Peter. 1967. *The grammar of English predicate complementation*. Cambridge, MA: MIT Press.
- Scalise, Sergio. 1988. Inflection and derivation. *Linguistics* 26.561-581.
- Schacter, Paul. 1985. Parts-of-speech systems. In Shopen 1985, Vol 1.3-61.
- Shopen, Tim. 1985 (ed.) *Language typology and syntactic description* (3 volumes). Cambridge: Cambridge University Press.
- Simpson, Jane. 1988. Case and complementizer suffixes in Waripiri. In Austin 1988.205-218.
- Speas, Margaret J. 1990. *Phrase structure in natural languages*. Dordrecht: Kluwer.
- Stowell, Tim. 1989. Subjects, specifiers, and X-bar theory. In Baltin & Kroch 1989.232-262.
- Sutcliffe, Edmund F. 1936. *A grammar of the Maltese language*. Oxford: Oxford University Press.
- Szabolsci, Anna. 1989. Is DP analogous to IP or CP? Paper delivered at the Colloquium on Noun Phrase Structure, University of Manchester, 18-19 September 1989. To appear in the Proceedings.
- Travis, Lisa. 1984. *Parameters and effects of word order variation*. Ph.D. dissertation, MIT.
- Travis, Lisa. 1990. Parameters of phrase structure. In Baltin & Kroch 1989.263-279.
- Van Valin, Robert D. 1985. Case marking and the structure of the Lakhota clause. In J. Nichols & A. Woodbury (eds), *Grammar inside and outside the clause*. Cambridge: Cambridge University Press. 363-413.
- Vincent, Nigel. 1980. Syntactic categories old and new: complementizers and conjunctions. Paper delivered to the Philological Society. London.
- Vincent, Nigel. 1989. Constituentization. Paper delivered at the Ninth International Conference on Historical Linguistics, Rutgers University.
- Vincent, Nigel. 1990. On the history of complementation in Romance. To appear in Battye & Roberts 1989.
- Vincent, Nigel. In preparation. Burzio's generalization, raising and lexical mapping theory. University of Manchester.