Discontinuous constituents in Latin

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Pullum (1982), in refuting claims that there are languages that are non-configurational and hence radically different from languages such as English, presents an analysis that accounts for the data under consideration using mechanisms already in place for GPSG. He uses ID/LP format to account for free word order within a constituent, and shows how metarules can account for cases of apparent discontinuity of the elements of a constituent, all while maintaining a grammar that is equivalent to finite state phrase structure rules. On the way, however, Pullum takes the curious tack of casting doubt on the existence of the phenomena he ends up explaining. In particular he argues (p. 6) that Ross's (1967) theory of scrambling 'had no acceptable empirical motivation' because his example was taken from Horace, who 'is noted for stretching tendencies in the living Latin language beyond all grammatical limits', and was not even typical of Latin poets (p. 5). In this squib I refute the claim that discontinuity was an extragrammatical device restricted to a few radical poets, but show that it was a phenomenon widespread even in prose. Furthermore, I will show that the discontinuity was of such an order that Pullum's metarule cannot account for it. Thus data that has always been readily available to Western scholars will be used to counter claims that Pullum and others have made about the limits of discontinuity.

I do not however wish to take the position that Hale (1983) adopts for Warlpiri, in claiming that virtually any constituent can be freely generated on either side of the verbal auxiliary (with in fact an unlimited number of constituents on the right side). Such a formalism implies that there is no basic word order, which, while perhaps true for Warlpiri, certainly is not the case for Latin. There is general agreement among scholars that Latin had an SOV structure, with conjunctions and relative pronouns preceding their clause, prepositions preceding NPs, and secondary objects preceding primary objects (Gildersleeve 1895:429-431; Hofmann 1965:397-410; Greenough 1903:393-400). There is not so much agreement on the basic placement of adjectives with respect to nouns, but this is not because the order was so free, but because so many factors were at play, and there is no pretheoretical grounds for determining which are more basic. For example, Hofmann (1965:406) says that intellectually objective adjectives tend to follow the noun, while affective ones tend to precede; Pinkster (1990:185) sees the issue as one of focus, with affective adjectives being more likely to precede because they are more likely to be used in focus. The point is simply that there was a basic word order, which is determinable not only by statistical means but also from our understanding of discourse functions in Latin. It has, for example, always been acknowledged since the time of the ancients that placing a word or constituent in an unusual position is an important means of focussing or emphasizing that element; see for example Greenough (1903:394-5) for an extended analysis of the fine shades of emphasis that are perceived in the opening paragraphs of Caesar's *De bello gallico*.

Implicit in the above statements of word order is that there was a constituent structure as well. The modifiers of a noun would group together to form a noun phrase with it; a noun phrase and a preposition would form a PP constituent; and verbs with their arguments and satellites would form a clause. One good piece of evidence for this is the behaviour of certain words such as *autem* 'however', *enim* 'for (because)', and especially vocatives, which tend to come in second position in the clause. This not only demonstrates that there is such a thing as a clause, but it shows that the element that precedes the second-position element is itself a constitutent. Just as Hale showed for Warlpiri, that constituent, though usually a word, can be a larger construction. Habinek (1985:53) believes that the traditional concept of the colon corresponds to the modern concept of a (multiverbal) phrasal constituent, with the result that the monumental work of prosodists like Eduard Fraenkel can be applied to our modern search for constituents. In particular, he finds that adjectives and nouns form a phrase, as shown especially by the regular placement of vocatives after such combinations. For a paper of this scope, I shall simply have to be content with such an appeal to authorities like Habinek and Pinkster (1990), rather than rigorously prove that Latin did not have a flat W* grammar. Fortunately, however, Pullum shares this view on this matter, so an excursus on constituency is unnecessary, at least for polemical purposes. The example of Ross's that he condemns as ungrammatical,

(1) Quis multa gracilis te puer in rosa perfusus liquidis urget odoribus grato, Pyrrha, sub antro?

contains only extractions of adjectives from noun phrases (*quis, gracilis, perfusus* separated from *puer*, *multa* from *rosa*, *liquidis* from *odoribus*, *grato* from *antro*), twice from prepositional phrases (*multa* from *in rosa*, *grato* from *sub antro*). So either NP or PP must be acknowledged by Pullum, probably both, or else he wouldn't find any scrambling at all to object to as unnatural.

So if it be accepted that Latin has at least NP, PP, and S constituents, the first matter to pursue is to just what extent those constituents were discontinuous in Latin. It should be noted that there were two broad types of discontinuities. The second-place constituents mentioned above, and especially the enclitics, *que, ne, ve*, most commonly followed the first word in the sentence or clause, regardless of its constituent structure (Gildersleeve 1895:300, 306, 310). In the following prepositional phrase,

(2) per [maria]$_N$ ac [montis]$_N$
through seas-NOM/ACC-N-PL and mountains-ACC-M-PL
[fluviosque rapacis]$_N$ [frondiferasque
rivers-ACC-M-PL-and raging-ACC-M/F-PL leafy-ACC-F-PL-and
domos avium]$_N$ [camposque
homes-ACC-F-PL birds-GEN-F-PL fields-ACC-M-PL-and
virentis]$_N$
green-ACC-M/F-PL
'through seas and mountains and raging rivers and leafy homes of birds and green fields'

(Lucretius, 1.17-8) the enclitic *que* is connecting entire noun phrases at the same time that it is breaking up those constituents. Thus this is a type of insertion into a constituent. There is no need to multiply these examples, since no one would deny that this is a very common process in Latin. It is not, however, immediately obvious to me how second-position clitics would be treated in GPSG. One solution might be for a *que*-conjunction metarule to introduce a SLASH-like enclitic feature on one side of the conjoined pair; this feature would be passed down one daughter of each node until discharged by a rule that allows the emergence of an explicit *que*. LP rules would insure that a constituent with *que* or a QUE feature would follow a sister lacking a QUE feature (except for the top-level constituent that introduces QUE, which would have to be specially annotated so as to follow its sister that doesn't have QUE). Unfortunately such a solution suggests that an element with *que* comes first because it has the enclitic, whereas probably the opposite is more nearly correct: some element comes first for independent reasons (it is the focus, or perhaps just the normal, unmarked initial element of a phrase), and gets the enclitic because it is first. Such an entailment may be impossible to express in GPSG, because of the restriction that metarules can apply only to ID rules, not to the product of the linearization of ID rules under LP rules. A more satisfactory approach would be one similar to that which Reape (1994) took in HPSG. The 'phonology' of a phrase should be taken to be an ordered list of words (not an undifferentiated concatenation of phonemes), and a clitic like *que* would be marked to have enclitic phonology. Upon joining two such constituents, the special clitic phonology would simply provide that the 'phonology' of the resultant construct be the phonology of the phrase, with the enclitic inserted in second position.[1]

[1] Of course in practice the rule would have to be a bit more complicated than that, since the clitic does not always appear exactly after the first word, but sometimes appears later. It is possible that the clitic rule looks at the syntactic derivation in order to find a small (usually minimal) syntactic constituent at the left edge of the phrase, but a more attractive hypothesis

The second type of discontinuity, and the type that Pullum was explicitly addressing in his paper, is that where a constituent appears to be extracted out of its natural construct, as was the case for all the adjectives in the Horace citation. In classical grammar this is most often known as hyperbaton, although other terms such as synchysis and trajection are sometimes encountered. Hyperbaton is never given a precise linguistic description. Gildersleeve (1895:436) defines it as 'a violent displacement of words', and one occasionally encounters puzzlers such as having a construction like PP[in NP[hoc signo]] considered hyperbaton because the preposition is separated from its head noun (whereas of course in modern syntax the object of the preposition is considered to be the NP, not the head N, so there is no separation of elements at all.) Nevertheless the literature on the topic is helpful to modern linguistic enquiry, because of its vastness and often quite careful detail. Wilkinson (1963:213-220) gives a gentle introduction to hyperbaton in classical poetry; the works of Eduard Fraenkel (such as 1928:327-41) deal extensively with the topic; the monumental grammar of Hofmann and Szantyr (1965) gives much detail on hyperbaton (p. 689-94), with a bibliography; and the matter is a favourite topic in manuals of rhetoric and style, such as Nägelsbach (1905).

The first question is whether hyperbaton was unique to Horace, and the answer is, no. It is true that Horace took the matter to extremes: Wilkinson (1963:220) cites a claim that Horace separated the noun and adjective more often than not (3:2). But hyperbaton was widely practiced in classical poetry. Ovid for example was capable of saying things like:

(3) grandia per multos tenuantur
great-NOM/ACC-N-PL through many-ACC-M-PL are-tapered
flumina rivos
rivers-NOM/ACC-N-PL brooks-ACC-M-PL
'Great rivers are channelled into many brooks'

(Rem. 445, cited by Pinkster 1990:186). Vergil wrote:

(4) puniceo stabis suras evincta
scarlet-DAT/ABL-M/N-SG thou-shalt-stand calves-ACC-F-PL bound
coturno
buskin-DAT/ABL-M-SG
'thou shalt stand with scarlet hunting-boots laced round your legs'

(Ec. 7, 32).[2] And Catullus (5) wrote:

would be that the choice is made strictly on the basis of purely phonological information found in the phonology field itself. Thus the clitic may prefer to attach to a phonological word or phonological phrase, which is derived in part from the syntactic phrasing but is independent of it and indeed may even be misaligned with it. This of course would reequire that the phonology field have more structure than a mere list of words.

[2] In many cases, the translations are taken from those found in the books listed in the bibliography. I have altered some of these to make them agree more closely with the word-for-word glosses, which are in all cases my own.

(5) rumoresque senum
gossip-NOM/ACC-M-PL-and elders-GEN-M-PL
severiorum omnes
censorious-GEN-M/N-PL all-NOM/ACC-M/F-PL
unius aestimemus assis
one-GEN-M/F/N-SG let-us-value penny-GEN-M-SG
'and let us value all the gossip of the censorious elders at one penny'

Indeed, a particular arrangement of NP hyperbaton, $\mathrm{Adj}_1\ \mathrm{Adj}_2 \times \mathrm{Noun}_1\ \mathrm{Noun}_2$ (as in the Ovid example above) has been claimed to occur once every 16 lines in Catullus, and that in Vergil it varies from 39 to 66 lines, depending on the work (Wilkinson 1966:216, citing Young). Norden (1957:391-2) finds that in Book 6 of Vergil, a verse is framed by an Adj N pair (i.e., the verse begins with the adjective and ends with the noun) 16 times per thousand lines, and 52 times per thousand in Catullus's Epyllion. This might lead one to hypothesize that hyperbaton was a characteristic particularly of poetry, and in some constructions that appears to be true. Solodow (1986) has written about a strange construction where an appositive is embedded within an NP; he found numerous examples, but only in poetry. However, in general one also finds numerous examples of discontinuity from prose writers, such as Cicero (Brut. 106):

(6) Hic optimus illis
He-NOM-M-SG best-NOM-M-SG those-DAT/ABL-M/F/N-PL
temporibus est patronus habitus
times-DAT/ABL-N-PL is lawyer-NOM-M-SG considered-NOM-M-SG
'He was considered the best lawyer in those days.'

And Livy wrote phrases like

(7) metu in magno
fear-ABL-M-SG in great-DAT/ABL-M/N-SG
'in great fear'

extracting the noun from the PP (cited by Gildersleeve 1895:267), and even curiosities like:

(8) legiones auxilio Faliscorum
legions-NOM/ACC-F-PL aid-DAT/ABL-N-SG Faliscans-GEN-M-PL
venerunt
came
'legions of Faliscans came to the aid' (4.17.11, cited by Hofmann 1965:192)

where the genitive NP follows not the N it modifies, but another one. Note that genitive NPs have no markers of agreement with the modified noun, so there is nothing but context here to give the right reading.

In light of such examples, one might wish to retreat and consider hyperbaton to be a feature of Latin literature of the classical period. And many texts say precisely that. Wilkinson (1966:213) states that hyperbaton was unknown in early Latin prose, and was introduced into the language under Greek influence early in the first century BCE. And yet we find Cato (d. 149 BCE) writing expressions like

(9) *villam* aedificandum si locabis *novam* ab solo (Agr. 14,1, cited by Hofmann 1965:690),

where the noun and adjective are separated by a verb. Terence (d. ca. 159 BCE) would separate an adjective and noun with a subject pronoun,

(10) *novi* ego *amantis* (Haut. 570, cited by Hofmann 1965:400).

Fraenkel (1928:334n1) lists several examples of Adj/N separation from Ennius (d. ca. 169 BCE), such as

(11) Africa *terribili* tremit horrida terra *tumultu* (310).

Even Plautus (d. ca. 184 BCE) was known to frame a verse with an Adj/N pair:

(12) *tuo* ego istaec igitur dicam illi *periculo* (Bacch. 599, cited by Hofmann 1965:691).

Since these are by no means isolated examples, the repeated statements by writers that hyperbaton was unknown in earlier Latin is rather puzzling. I suspect that part of the problem is due to the fuzziness of the term *hyperbaton*: recalling definitions like ‘a violent displacement of words’, writers may tend to discount simple displacements of a single adjective, in comparison with the multiple discontinuities and cross-serial dependencies encountered in poets like Horace. And it is certainly true that hyperbaton is less frequent in the earlier writers. Habinek (1985:56), in comparing Ennius's Annals with Vergil's Aeneid, found that Ennius used special Adj/N placement only twice in eighteen lines (11%) in order to avoid a phrase boundary at the third foot caesura, but that Vergil did so 16 times in 35 lines (46%).

But while questions of frequency are certainly of major significance to many important approaches to language, when considering what types of grammars are needed to account for a language, one's motto must be ‘in for a pound, in for a penny.’ A syntactic construction cannot be discounted because it is not very frequent, unless of course it is so rare as to count as a performace error.[3] Nor do I think it would be wise to claim that the syntax of all natural languages are restricted to a particular grammar type, if one has to dismiss from consideration poetry, which was of course very much a part of the living language and widely appreciated in oral settings. As Habinek (1985:51) said at the beginning of his study on poetic word order, ‘Decades of scholarship on poetic language, or

[3]Hofmann 1965:690 dismisses some Adj/N separation, as in the Cato example above, as epexegesis.

"Dichtersprache", cannot obscure the fact that Latin poetry is written in Latin.' Fortunately the mass of evidence from Latin is so compelling that one cannot claim that discontinuous expressions are restricted to one poet or even to a particular coterie of literary figures. To deny the evidence, one would have to make the truly radical claim that written language in general must be rejected, and hence virtually all evidence from the classical languages.

Having demonstrated that discontinuity is not aberrational in Latin, it may be useful to look in a bit more detail at the types of discontinuities that are encountered. Preposing the adjective before its head noun appears to be by far the most common,[4] followed by a tendency to break up prepositional phrases; and putting these together, one gets one of the most common discontinuity of all, placing the adjective before the preposition (e.g., *magna cum laude*); Gildersleeve 1895:267 cites also Cicero as writing

(13) hanc igitur ob causam
this-ACC-F-SG therefore for reason-ACC-F-SG
'for this reason, therefore' (Br. 24, 94)

These phenomena may date back to the Proto-Indo-European period, where there were no PPs (what became prepositions were then adverbial) and adjectives may have basically been appositional nouns. One might compare this with the free word orders in the other old languages such as Sanskrit, or Greek, where the 'fatal wrath' that opens the Iliad is separated at the beginning of two adjacent lines. However other factors must be at work as well. The fact that adjectives have fairly complex agreement principles (matching their noun in gender, number and case) certainly helps, as well as the fact that objects of prepositions have a distinctive case marking (selected by the preposition). It is noteworthy that it is usually the adjective that is fronted, much less commonly the noun (Bermúdez Ramiro 1985; Norden 1957:392). This no doubt has a functional explanation: when hearers hear an adjective, they enter into some expectation that a noun is on its way; but since a noun can by itself constitute a noun phrase, hearing it gives no clue that more material is coming. But prescinding from such functional explanations and sticking to a strict enumeration of what elements are subject to discontinuity, it appears that Ross (1967:42) was correct in stating that all major constituents can appear at arbitrary locations within their clause.

Nothing presented so far suggests that Ross was wrong in restricting his scrambling rule to within a single clause. The idea that scrambling never moves an element out of a finite clause (or that discontinuities never extend across clauses) is appealing. Functionally, the reduction of the availability of case marking to reduce ambiguity would naturally suggest that such scrambling

[4] Placing an adjective immediately before its noun may be a form of this same operation, if less dramatic. This would harmonize with the position of Pinkster (1990:185), that adjectives were basically post-nominal unless fronted. But see Bermúdez Ramiro (1985:196) for a strong contrary opinion.

should be disfavoured. And from the point of view of grammar theory, restricting scrambling so that it does not extract a constituent from one level of a recursive category into another may permit a grammar to be context free. It is for this reason that Pullum (1982:8) argues that such recursive extraction is not possible in a human language, a universal that naturally falls out from his way of formulating metarules.

There does however appear to be evidence that clause boundaries are violated in Latin. Nägelsbach (1905:626-48) investigated the Latin period, that is, multiclausal sentences, with a view to comparing them stylistically with German sentences and pointing out what configurations can occur in Latin but not in German. Principle among these is the case where the Latin matrix clause appears to be embedded within the main clause.[5] These sentences appear to be cases of some elements of an embedded finite clause leaking into the matrix clause. Here are some examples, where the subordinate clause material is italicized:

(14) Tametsi *tu* scio *quam*
Although thou-NOM-M/F/N-SG know-INDIC-PRES-1SG how
sis *curiosus*
art-SUBJ-PRES-2SG interested-NOM-M-SG
'Although I know how interested you are' (Caelius at Cicero, Fam. 8, 1, 1)

(15) *illorum* vides *quam*
their-GEN-M/N-PL seest-INDIC-PRES-2SG how
niteat *oratio*
is-elegant-SUBJ-PRES-3SG speech-NOM-F-SG
'you see how elegant their speech is' (Cicero, Fin. 4, 3, 5)

(16) Primum *ista* *nostra* *adsiduitas,*
Firstly this-NOM-F-SG our-NOM-F-SG constant-presence-NOM-F-SG
Servi, nescis *quantum*
Servius-VOC-M-SG knowest-not-INDIC-PRES-2SG how-much
interdum *adferat* *hominibus*
sometimes brings-SUBJ-PRES-3SG people-DAT/ABL-M-PL
fastidi
disgust-GEN-N-SG
'Firstly, Servius, you do not realize how tired and bored people get at seeing us always on the job (*lit.* how much disgust our presence sometimes brings to people).' (Cicero, Mur. 9, 21)

[5] Nägelsbach is careful to distinguish this from situations where a main clause is broken up by another main clause, which is possible both in Latin and in German: *dies, fürchte ich, geschieht* 'this, I fear, is happening', which is a different sort of problem analogous to that of sentence modifiers, which seem to be able to pop up in many different locations within the sentence.

(17) Ac veteres quidem philosophi *in*
But old-NOM/ACC-M/F-PL indeed philosophers-NOM-M-PL in
beatorum *insulis*
blessed-ones-GEN-M/N-PL islands-DAT/ABL-F-PL
fingunt qualis *futura*
picture-INDIC-PRES-3PL how going-to-be-NOM-F-SG
sit *vita* *sapientium*
is-SUBJ-PRES-3SG life-NOM-F-SG wise-ones-GEN-M-PL
'The old philosophers picture how the life of the wise is going to be in the Islands of the Blessed' (Cicero, Fin. 5, 19, 53)

(18) *Haec* sine physicis
these-NOM/ACC-N-PL without physics-DAT/ABL-N-PL
quam *vim* *habeant* (*et*
what-ACC-F-SG meaning-ACC-F-SG have-SUBJ-PRES-3PL (and
habent *maximam)* videre
have-INDIC-PRES-3PL very-great-ACC-F-SG) to-see
nemo potest
no-one-NOM-M/F-SG can-INDIC-PRES-3SG
'No one without Physics (*i.e., Natural Philosophy*) can discern what meaning these things have (and they have a lot)' (Cicero, Fin. 3, 22, 73)

One might observe that even though Pullum argues against extraction between finite clauses, his metarule formalism does not necessarily rule that out, at least as it is formulated in the paper. One could write a metarule that scrambles from one clause to its parent. What is vital is that metarules not apply to their output, lest the resultant grammar be infinite. Thus it is scrambling between arbitrary levels of recursively embedded clauses that is ruled out. Making a special case of single-level extraction is rather distasteful because it brings to mind attempts to deal with the infinity of language by denying it (one can write completely different types of grammars if one is willing to say that no sentence can be longer than 10,000 words or that no one will ever centre-embed a clause deeper than 5 levels), but still it would be comforting to find examples of extraction across more than one level of clause. Since even single-level extraction has not been widely recognized, it is understandable that good cases of multiple-level extraction are hard to come by, but the following may be an example. I set in boldface type the material which belongs to a subsubclause.

(19) **quibus** **omnibus** dici vix
which-ABL-M/F/N-PL all-ABL-M/F/N-PL to-be-said scarcely
potest *quantum* *intersit*
can-INDIC-PRES-3SG how-much be-different-SUBJ-PRES-3SG
quem **ad modum** **utatur**
what-ACC-M-SG to way-ACC-M-SG uses-SUBJ-PRES-3SG

orator
orator-NOM-M-SG
'It can scarcely be described what difference it makes, in what way the orator uses all of which [gestures]' i.e., 'The way in which the orator uses these [gestures] makes a difference which can scarcely be described.' (Cicero, Orat. 17, 55)

These various discontinuity phenomena have several different functions. At a very high level, a certain amount of faddishness is admittedly involved. Hyperbaton changed from being an occasional tool to being a cherished mark of sophistication in the first century BCE. Interesting word orders such as the cross-serial golden verse became valued for thier own sake. At a lower level, the most obvious function is that rearranging words is one way of getting the poetic metre to work out right. But discontinuities appear even in prose, and it is easy to show that they often appear where a more straightforward word order would have exactly the same metre (Habinek 1985:54). Another important goal is providing focus by fronting elements one wishes to emphasize. One of the more interesting insights comes from the traditional observation that hyperbaton often serves to 'frame the colon'. Habinek (1985) makes the important observation that hyperbaton actually defines the colon. When Vergil says

(20) interea et tacitum vivit sub pectore vulnus (A.4.67)

where *tacitum* modifies *vulnus*, he is ensuring that *tacitum vivit sub pectore vulnus* is read as a single phrase; the ordering *interea et tacitum vulnus sub pectore vivit* (note that the metre would be the same) could be read with a pause after *vulnus*. Thus hyperbaton gives the poet an important tool for playing the poetic metre and the discourse phrasing against each other. Nägelsbach (1905:631) makes a similar point with respect to hyperbaton across clause boundaries:

> ... sie (die Sprache) hat den superordinierten und den subordinierten Satz zu einem unauflöslichen Ganzen verflochten, den einen mit dem andern durchwoben, und somit aus einem logisch und grammatsch Zwiefachen wiederum eine Einheit gemacht... Hieraus folgt aber mit Notwendigkeit, daß innerhalb solcher Verschmelzungen alle Interpunktionszeichen verschwinden müssen...

In more recent linguistic theory, one might say that scrambling across NPs extends the phonological phrase, and scrambling across clauses extends the intonational phrase. As was the case for clitics, these considerations again lead to the conclusion that the syntax of languages like Latin has a dual foundation. On the one hand, the argument and adjunct relations between lexemes determines agreement properties and the fundamental word order. On the other hand, actual word order has a great deal of freedom, which in normal speech is no doubt exploited primarily by discourse factors such as focus. This suggests a split such as that between the HPSG SYNTAX and PHONOLOGY fields, where we follow Reape's lead in allowing the PHONOLOGY combination function to be something more sophisticated than concatenation. In principle, the function would allow almost unlimited scrambling within the sentence, although ideally one would also like input from modules representing the discourse. The close connection between surface word order and phonological phrasing is an intimation that a suitably structured PHONOLOGY field is the right place to handle these word orderings.

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