On Parameters and on Principles of Pronunciation*

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1. On parameters.

The point that Chomsky (1995, 160) makes concerning Case chains can be put as follows:

(1) Languages themselves are never the immediate locus of parametric variation. Rather, parametric variation across languages/grammars is to be thought of in terms of varying features/properties of corresponding items of the lexicons of the languages in question.

A familiar question is whether the locus of parametric variation in syntax is always restricted to functional as opposed to lexical items. Such a restriction seems plausible, although there are some potential counterexamples worth considering.

One has to do with nominal gender. For example, French and Italian have strongly similar gender systems, yet the word for *sea* is feminine in French (*la mer*) and masculine in Italian (*il mare*). This looks like a parametric difference associated with *mer*/*mare*, which is a lexical rather than functional item.

Alternatively, though, it is feminine gender itself (an item of the lexicon - cf. Ferrari (2005)) that has slightly different properties in French vs. Italian. One common property of feminine gender in the two languages is that, to the (partial) extent that it is subject to arbitrariness, it can be associated with a list indicating which lexical items (including suffixes - Williams (1981) - which reduces the size of the list considerably) have feminine gender in unpredictable fashion. In French this list (arbitrarily) contains *mer*, whereas in Italian it does not contain the corresponding *mare*. In this way we can think of the *mer*/*mare* difference as being associated most directly with a functional item (feminine gender).

This parametric property of feminine gender may look complex, in that it consists of a long (but finite) list of nouns. But this is counterbalanced by the fact that looking at things this way avoids having to have a large number of feminine nouns associated with a gender parameter directly.

From this perspective, feminine gender can be merged with a noun only if (in the unpredictable cases) that (suffixal) noun is contained in its list, in essence a selectional property of feminine gender. (Feminine gender via agreement, on adjectives, determiners, etc. will involve something more.)

A second potential counterexample to the claim that parametric variation is limited to functional items comes from prepositional complementizers of the sort found in French and Italian. In both languages, infinitives are often preceded by no overt prepositional complementizer (the contexts are not identical in the two languages). In both, prepositional complementizers frequently do appear (again, the contexts are not identical). The prepositional complementizer is usually *de* in French and *di* in Italian. Sometimes it is *à* in French and *a* in Italian. A minimal difference is found with their counterparts of *try*: *essayer de...* in French vs. *provare a...* in Italian.

If French *essayer* differed from Italian *provare* in being parameterized for taking *de* rather than for *à* (and the reverse for *provare*) we would be associating a parameter with a non-functional item (assuming *try* to be lexical).

Alternatively, it might be that at least the prepositional complementizer *à*/*a* is associated with a list of (subject and object control) verbs that it selects for and that differs somewhat in French vs. Italian. In Italian *provare* is on the list associated with *a*; in French *essayer* is not on the list associated with *à*.

An apparent problem is that *a* seems to be in the wrong place relative to the verb, if *a* is to be the selector (parallel to feminine gender). The problem would dissolve if prepositional complementizers are merged outside VP, as in Kayne (2005, chapters 5, 7 and 9). (Strictly speaking, the relation between prepositional complementizer and verb (or VP headed by it) will be mediated by a K(ase) morpheme.)

2. Intra-language parametric variation.

A possible objection to the preceding is that within Italian there are actually two verbs for *try* (cf. *try* and *attempt* in English) and they differ from each other in choice of prepositional complementizer:

(2) Gianni ha provato a cantare. ('G has tried *a* sing-inf.')

(3) Gianni ha tentato di cantare. ('...attempted *di*...')

The earlier difference between French *essayer de...* and Italian *provare a...* might then appear misleading, since Italian *tentare di...* seems to show that what's at issue is not really a difference between French and Italian at all.

The correct reply to that objection, I think, is that that's exactly what is expected, given (1). Languages are not the locus of parametric variation. Italian *a* contains in its verbal selection list *provare* but not *tentare*, an example of intra-Italian parametric variation.

Another example of the same general sort comes from French vs. English:

(4) Jean est assez grand pour... ('J is enough big for/to...')

(5) John is big enough to...

Alone among degree words in English, *enough* follows the associated adjective:

(6) *John is enough big to...

as opposed to:

   (7)   John is too/so/as/how big.

   (8)   *John is big too/so/as/how.

In French *assez* patterns regularly with the other degree words:

   (9)   Jean est trop/si/aussi grand.

   The word order difference between (4) and (5) can be thought of parametrically in movement terms. In English the adjective must move higher past *enough* (cf. in part Bresnan (1973, 285) and Jackendoff (1977, 151)). No comparable movement takes place in (standard) French.

   But again (as with prepositional complementizers), this is not just a French/English difference, since we see something similar entirely within English, insofar as the other English degree words don't share the property of *enough* that induces movement of the adjective.

   And again there is nothing unexpected here. Given (1), it's not languages that differ parametrically, at bottom, but rather particular elements of the lexicon (arguably only functional elements) that differ parametrically. So there's no reason at all not to expect that in many languages there will be cases in which similar elements within that language have differing properties (such as *enough* vs. the other degree elements in English). Another way to put this is:

   (10) Parametric variation occurs within languages as well as across languages.

A stronger formulation (that seems plausible) is:

   (11) The parametric variation that occurs within languages is of exactly the same sort as the parametric variation that occurs across languages. The elements subject to it are the same in both kinds of cases, and the features/properties in question are, too.

3. Back to lexical vs. functional.

   In addition to gender and prepositional complementizers, the count/mass distinction appears to involve parametric variation associated with lexical rather than functional items. For example, English and French differ with respect to *grape*:

   (12) Give us some grapes/*grape.

   (13) Donne-nous du raisin/*des raisins.

In English *grape* normally has count noun properties and can be used as a mass noun only in special contexts. In French *raisin* is on the contrary normally a mass noun. (It can be used as a count noun in special cases.) This looks like a parametric difference associated with lexical items.

   Alternatively, we might try to relate this kind of variation to:

   (14) John has a large number/*amount of friends.

   (15) John has a large amount/*number of money.

by taking lexical nouns to always be accompanied by either *number* or *amount* or (cf. Kayne (2005, chapter 8)) unpronounced NUMBER or AMOUNT, depending on count vs. mass.

If we take nouns like *number* and *amount* and their unpronounced counterparts to be functional, not lexical, elements (cf. the notion 'semi-lexical' in Corver and van Riemsdijk (2001)), then we can say that these functional nouns select for lexical nouns (again, in the unpredictable cases in terms of a list - the selection configuration needs to be made precise). English *grape* and French *raisin* differ with respect to which list they are on. If so, we are looking at a property of functional nouns (and only indirectly at a property of lexical nouns). English NUMBER/*number* selects for *grape*, French AMOUNT/*quantité* selects for *raisin* (the relevance of markedness needs to be worked out).

Consider now the case of missing lexical items, of the sort illustrated by English *shallow* having no direct counterpart in French. This might be thought of as a parametric difference centered on a lexical (as opposed to functional) item (realizable in one language but not in another). But that would appear to leave out the fact that French can readily express what English expresses using *shallow*, namely with *peu profond* ('little deep').

The alternative that suggests itself is that *shallow* in English is necessarily accompanied by LITTLE BIT:

   (16) This lake is LITTLE BIT shallow.
LITTLE BIT 'selects' for certain adjectives, including *shallow*, in English. The same is true in French, except that French has to pronounce BIT (as *peu* - cf. Kayne (2005, sect. 12.4)). Thus this French/English difference may be rethinkable as a property of LITTLE and/or BIT, both arguably functional rather than lexical.

A case that may lie at the intersection of *shallow* and *grape* is one pointed out (p.c.) by Peter Svenonius, who noted that various languages presumably lack a direct counterpart of *reindeer*. In fact French seems to lack a word corresponding to English *moose*. Thinking of the fact that the plural of *moose* is *moose* and that such a zero plural is widespread in English with names of animals, it may be that English has an unpronounced classifier for (large) animals that is associated with a selection list that contains *moose*. French would have a comparable classifier whose selection list contains no parallel item, so the parametric difference would be associated more directly with the animal classifer than with *moose* itself.

There is some similarity between this case and the Hale and Keyser (2002) discussion of *laugh* in English vs. Basque, which expresses *laugh* as overt light verb plus noun. The expectation would be that this difference could be localized as a property of the light verb itself, which has to be pronounced in Basque vs. English and which would count as functional, rather than as a property of lexical *laugh*. (In this case and in general, it is essential that the properties associated with parameters be limited in complexity.)

As a final case bearing on the functional vs. lexical question, consider idioms, which seem to crucially involve, in at least some cases, arbitrary choices of lexical items (judgments given for the idiomatic sense), e.g.:

(17) He just kicked the bucket/*pail.

(18) They're going to have to close up shop/*store.

It remains to be seen to what extent these are really arbitrary choices that would have to be directly associated with the lexical items in question. For example, *shop* vs. *store* might be related to:

(19) They're going shopping/*storing.

and *bucket* vs. *pail* to:

(20) You've been spending ?buckets/*pails of money these days.

4. More on *enough*.

The difference within English between *enough* and the other degree words seen in (4)-(8) is paralleled by a well-known difference concerning cooccurrence with *much*:

(21) They have too/so/how/as much money...

(22) They have *enough much/*much enough money...

With *enough*, we have no visible *much*:

(23) They have enough money.

which is not possible in English with the other degree words:

(24) *They have too/so/how/as money.

In present terms, the natural proposal is that (23) contains an unpronounced MUCH (cf. Jackendoff (1977, 152)).

But that by itself leaves us with a curious coincidence. *Enough* is the one degree word to occur with unpronounced MUCH rather than with pronounced *much*, and also the one degree word that imposes the order 'adjective + degree word', as in *smart enough* (vs. *smart too*, etc.).

A step toward linking these two properties is to say the following:

(25) MUCH in (23), like overt *much*, is an adjective (cf. the related *little* and also *few/fewer/fewest* - Kayne (2005, chapter 8)).

and:

(26) Like other adjectives, MUCH precedes *enough*.

Therefore the structure of (23) is:

(27) ...MUCH enough money.

We can now account for the impossibility of (24) if the following two statements hold:

(28) MUCH comes to precede *enough* as a side effect of adjectives in general coming to precede *enough*, in which case we would expect MUCH not to be able to precede *too/so/as/how*.

and:

   (29) MUCH is legitimate only if it comes to precede the degree word.

    In other words, (24) is unavailable in part because (30) is unavailable:

   (30) *...MUCH too/so/as/how money

(due to the absence of adjective preposing across degree words other than *enough*)
and in part because by (29) MUCH is not legitimate in:

   (31) *...too/so/as/how MUCH money.

5. On Principles of Pronunciation.

    The question now is what distinguishes (31) and (27), i.e. why does MUCH need to prepose?

    This needs to be related to a broader question:

  (32) Why should UG ever allow elements that can perfectly well be pronounced (e.g. as *much*) to sometimes be unpronounced?

    The answer to this broader question is, I think, that the existence of non-pronunciation (at least of the MUCH type, but arguably more broadly, as I will suggest) is an automatic consequence of the architecture of derivations. (Rizzi (2005) independently has a partially similar idea for the case of the high portion of root contexts.)

    Assume that the following holds:

  (33) i) At a given phase level, only the head and material in the c-command domain of the head can (and must) be spelled out.

       ii) At a given phase level, no material within (or adjoined to) a lower phase can be spelled out.

If so, then spellout systematically and automatically 'fails to see' phrases in the Spec of a phase (similarly for adjunction, if that is distinct). Any pronounced Spec will of necessity now be the Spec of a non-phase. (For example, an overt wh-phrase must be in the Spec of a non-phase.)

    Assume further:

  (34) (33) is the only source of non-pronunciation (at least of elements that have a potential pronounciation).

    Then we can say that (31) is excluded because MUCH/*much* did not reach the Spec of any phase. In (27), on the other hand, MUCH/*much* arguably has reached the Spec of some phase and therefore can (and must) be unpronounced. (In *big enough*, the lexical adjective *big* must not end up in the same position as MUCH/*much*. Note that from the present perspective *much* and MUCH are identical, apart from landing site.)

    The question arises as to the status of unpronounced copies in a movement chain, a question that might be closely related to the present discussion. Assume that successive cyclic movement passes through the Spec of a phase (alternatively,

via adjunction). The corresponding copy is typically unpronounced. This follows immediately from (33). (Apparent cases of pronunciation of an intermediate or lower copy might be hidden cases of doubling.)

   Somewhat different is the question of the typical non-pronunciation of the lowest copy in a chain. We could bring this case into the present framework by claiming:

   (35) Moved phrases must originate in the Spec of a phase.

(And by (33) they must not end up in the Spec of a phase, if they are pronounced.) If (35) holds, then there is no longer a need to stipulate that only the highest copy of a chain is (typically) pronounced.

   I am assuming that there is no covert movement of the LF type (if only because there is no LF component - cf. Chomsky (2005)). The question also arises as to whether there can be movement from Spec,non-phase to a c-commanding Spec,phase. Long movement of that type may be excluded for PIC reasons. Whether short movement of that type exists is left an open question.

6. Further types of non-pronunciation.

   We also have cases of non-pronunciation related to the presence of a non-c-commanding antecedent, as e.g. with VP-deletion. The non-pronunciation of the VP will follow from (33)/(34) if that VP is the Spec of some phase (or phases, if it moves).

   Note in passing that Chomsky's (1995, 203) idea of linking VP-deletion directly to VP-destressing does not cover the whole range of cases:

   (36) JOHN didn't break the window, YOU did (*break the window).

   (37) Who broke the window? HE did (*break the window).

In these, a destressed in situ VP is impossible.

   French allows unpronounced objects of certain prepositions in a way that English does not. Alongside:

   (38) On a tiré sur lui. ('one/they have shot on him')

one has:

   (39) On a tiré dessus. ('...shot of-on')

By (33)/(34)/(35), the unpronounced object must be in the Spec of a phase, the head of which might be the *de* whose appearance needed explaining. (Alternatively, *de* itself might head a phase through whose Spec the unpronounced object has passed. In some cases there may be an unpronounced counterpart of *de*.)

   What about unpronounced heads? If the unpronounced head is the head of a projection that contains no pronounced material at all, we can speak of an unpronounced phrase, and fall back into the previous discussion.

   What, then, of an unpronounced head whose maximal projection does contain pronounced material (in complement or in specifier position)? A familiar apparent such case is pseudo-gapping/VP-subdeletion, as in:

   (40) He praises you more often than he does us.

An idea that goes back to work by Jayaseelan (1985) is that the stranded phrase *us* in (40) must have been moved out of the VP prior to 'deletion'.

But why couldn't the verb alone have been 'deleted' under identity with the matrix verb?

Assume as earlier that (33) is the sole source of non-pronunciation (at least for elements that have a possible pronunciation). Then the verb alone could not possibly be unpronounced, since head positions themselves (whether of phases or non-phases) will never fail to be seen by the operation of spellout. Spellout will fail to see V in (40) if V is within a phasal Spec, in which case pronounced *us* must not be, i.e. must have moved out (to the Spec of some non-phase), which is what we needed to show.

Note that the 'must' of (33)i excludes classical head movement. Head movement that would leave a pronounced copy behind might in turn be excluded if the doubling alluded to just above (35) in incompatible with head positions - cf. Kayne (1994, 59) on coordination.

7. Back again to *enough*.

The deviance of:

(41) *John has much enough money.

can now be attributed to (33) (assuming the appropriate landing site(s) for *much*/MUCH).

As is well-known, (41) contrasts with:

(42) (?)John has little enough money.

which in turn correlates with the fact that (23) cannot have the interpretation of (42). Put another way, *little* must be pronounced, unlike *much*, even when preposed to *enough*. Rather than an informal notion of 'recoverability', it might be that (42) contains an unpronounced negation (that must be licensed by overt *little* - cf. the earlier discussion of *shallow*) and that the presence of that negation prevents *little*/LITTLE from reaching the Spec of a phase.

8. Conclusion.

I. The restriction of parametric variation to functional elements may be tenable despite a number of apparent counterexamples.

II. The pronunciation or not of material that has a potential pronunciation may be entirely and automatically regulated by principles (33)-(34)-(35) that make reference to phases and to spellout; spellout will have a 'blind spot' for material in the Spec of a phase. (It remains to be determined how closely the notion of phase needed here matches the notion of phase needed for movement and the PIC (and what exactly determines what categories count as phases).) If (33)-(34)-(35) are correct, then UG has no need for an additional operation of deletion or ellipsis.

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References:

Bresnan, J.W. (1973) "Syntax of the Comparative Clause Construction in English," *Linguistic Inquiry*, 4, 275-343.

Chomsky, N. (1995) *The Minimalist Program*, The MIT Press, Cambridge, Mass.

Chomsky, N. (2005) "Three Factors in Language Design," *Linguistic Inquiry*, 36, 1-22.

Corver, N. and H. van Riemsdijk, eds. (2001) *Semi-lexical Categories*, Mouton de Gruyter, Berlin.

Ferrari, F. (2005) *A Syntactic Analysis of the Nominal Systems of Italian and Luganda. How Nouns Can Be Formed in the Syntax*, Ph.D dissertation, New York University.

Hale, K. and S.J. Keyser (2002) *Prolegomenon to a Theory of Argument Structure*, The MIT Press, Cambridge, Mass.

Jackendoff, R. (1977) *X' Syntax: A Study of Phrase Structure,* MIT Press, Cambridge, Mass.

Jayaseelan, K.A. (1985) "Incomplete Deletion of VP's, Compared Constituents and Clauses," ms., Central Institute of English and Foreign Languages, Hyderabad (India).

Kayne, R.S. (1994) *The Antisymmetry of Syntax*, The MIT Press, Cambridge, Mass.

Kayne, R.S. (2005) *Movement and Silence*, Oxford University Press, New York.

Rizzi, L. (2005) "Grammatically-Based Target-Inconsistencies in Child Language," ms., University of Siena.

Williams, E. (1981) "On the Notions "Lexically Related" and "Head of a Word"," *Linguistic Inquiry*, 12, 245-274.