Review of *Directionality and Logical Form: On the Scope of Focussing Particles and Wh-in-situ* by Josef Bayer in *Yearbook of South Asian Languages and Linguistics 1*, London: Sage Publication.

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The sub-title of the book under review -- *On the Scope of Focussing Particles and Wh-in-situ* -- probably covers a larger range of the topics discussed within than the title *Directionality and LF*, both of which work as life-lines connecting chapters 1-6 and chapter 7. The title is also an attempt to reinstate our faith in matters severely dislodged recently by Kayne in his little gem, *The Antisymmetry of Syntax* (1994)[1]. But that is only half the truth. As far as LF is concerned, the main thesis that Bayer pushes is that there must be a level of representation of LF. This is not an earth-shaking proposal by itself; but combined with promises to show that

- abstract and visible movements are subject to the same constraints, and
- syntax of LF is more transparently derivational than overt syntax,

it is a rather awesome task that Bayer sets himself. In this context, it does not so much matter that the latter of the two promises never really gets fulfilled; the reader gets more than s/he can bargain for in a book of modest length (pp 328).

The importance of this study, for many readers of this Yearbook, may however lie in its attempt to resurrect the directionality parameter from -- what we may call -- the post-Kaynean ruins of the syntax of head-final languages. Notwithstanding Chomsky's attempt to reduce word order to the PF-- therefore playing no part in the computation from the numeration to LF -- and his integration within the bare theory of a modified Linear Correspondence Axiom (i.e., essentially rejecting the conceptual arguments for LCA), the range of evidence that Bayer garners in chapters 3-7 constitutes, what may surely be considered, a successful attempt in maintaining directionality as a 'supervising force' in government.

Crucially, this also brings across an 'uncomfortable' or, in my view, 'alternative' stance that the work is forced to take. A book published in 1996, that broadly accepts the minimalist framework and insists on government as a crucial notion deciding directionality, must clearly *imply* (since Bayer never clearly *states* this point) an alternative view of syntax. I will be inclined to read it as a matter of conscious choice rather than a mere chronological accident. Be that as it may, the third major thrust of the discussion in this connection

- directionality is not only important in syntax but in LF too

can be taken to be a direct stand against minimalism which decisively pushes LCA to the PF (see above and p340 of Chomsky (1995) *The Minimalist Program* MIT Press, Mass.).

Ironically, it is from Kayne's earlier work (1983) on g-projections (which define an "extraction domain"), that Bayer initiates his directionality argument. This and its extension in Koster's (1987) Condition on Global Harmony (CGH), which informally states that extraction is only possible if all the governors "point" in a uniform direction, is the first step that Bayer takes in building his case. Chomsky (1986a), on the other hand, as Bayer himself points out, does not take directionality as a defining notion for extraction domain. Rather, he uses other syntactic notions, e.g. adjunction, to escape barrierhood. These other notions, according to Bayer, do not "constrain derivations sufficiently" (p43). Specifically, they do not work for mixed word order systems such as Dutch or German.

Although superior and empirically richer, Bayer's theory of directionality remains essentially Kosterian. For example, the simple explanation that CGH offers for the possibility of P-stranding in (1a) would not be greatly improved in the present study.

(1a) $DP_i [_{PP} e_i \ P] \ V]$ b* $DP_i [_{VP} [_{PP} P \ e_i] \ V]$

However, one respect in which it crucially differs from Koster's account is in terms of movements at LF. For Koster, CGH doesn't apply at LF which, for him, does not exist as a syntactic level of representation. Scope, for example, is not constrained by directionality in Koster's theory. Bayer's goal, as we have seen, is to show that syntactic movements are replicated (under similar constraints) in the LF. To prove this, he looks at

- focusing particles like *only* and *even* (chapters 1-6)
- Wh-in-situ (chapter 7)

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[1] All references, unless otherwise stated, are from the book under review

He shows that the theory of scope assignment for focusing particles relies on syntactic principles and it makes correct (LF) predictions as to their quantificational versus scalar interpretation. This forms most of chapters 1-3 in the book.

Based on Rothstein's (1991) classification, focusing particles are considered as *minor* functional heads (p 14). The only PS requirement is that they attach to a maximal category which is able to bear stress. This type of head does not project categorial features. Early in the book, Bayer presents the Jacobs (1983) and Rooth (1985) approaches to these focusing particles and adopts the latter approach of 'non-movement' focus association as the basis of his analysis.

In chapter 2, Bayer builds upon the scope of these focusing particles by distinguishing their quantificational and scalar uses. A quantified XP, [PRT XP] must move to a position from which it can have access to its domain of quantification. The important result that Bayer derives is that a constraint similar to CGH holds for these quantificational expressions (or [PRT XP]s). The difference between quantificational and scalar interpretations is to be ascribed to the access that the PRT can have over a particular domain of quantification. He appeals to semantic feature checking (in addition to morphological) to satisfy last resort.

In chapter 3 alongside the main argument that PPs (and DPs and APs in later chapters) are barriers to syntactic and LF movement, a sub-motif that enters at this stage of the development of the theory, is that effects like P-stranding are not observed in case of other quantifiers, negatives or Wh-operators. This is to be expected, given that focusing particle constructions are a different kettle of fish. This seems to sufficiently clinch the main thesis of the book that LF is a separate level of representation. However, this does not go to show the equivalence between overt and abstract syntax -- that is quite another matter.

Non-canonical government is introduced in the definition of barriers (p 93) to allow stranding dependent upon directionality -- the original CGH story. Looking at mainly non-P stranding languages (Romance) and the H-initial languages like Scandinavian, Bayer shows that if a language allows P-stranding in syntax, it allows it in LF too. Again, it is shown that LF barrierhood of PP is seen only in case of quantificationally focusing particles and not in the case of quantification rooted in the agreement system.

Chapter 4 looks at extraction from DP and shows that the Left Branch Constraint -- no extraction from the left branch -- holds at LF. This satisfies a part of the theme of the book. The definition of barrier (with a directionality clause) is shown to be insufficient for extraction from DPs in German as in (2b) below:

(2a) $[_{DP} [_{D'}$ der $[_{NP} [_{N'}$ Blick $[_{PP}$ auf's Meer]]]]] "the view at-the sea"
         'The view of the sea'
(2b) $[_{DP} [_{PP}$ auf's Meer]$_i [_{D'}$ der$[_{NP} [_{N'}$ Blick e_i]]]]   ((1a,b) p123)

Bayer follows other DP researchers and assumes that Spec DP provides the escape-hatch. But with (2c) both CGH and the modified barrier definition run into problems:

3c $[_{PP}$ Auf's Meer]$_i$ haben leider nicht alle $[_{DP} e_i [_{D'}$ den $[_{NP}[_{N'}$ Blick $e_i]]]]$geniessen konnen
                    have unfortunately not all   the   view   enjoy   can
         'Unfortunately, not everyone could enjoy the view of the sea'   ((1c) p123)

The leftward directionality pattern in German breaks down in the N-D system. According to Bayer, fluidity of movement inside this system is related to a sharing of the agreement index between N and D. The barrier definition is suitably modified to include agreement as in $[_{ZP} ... Z^{agr} ... [_{XP} ...X^{agr} ...YP]]$ which obliterates the distinction between Z and X. This revision, however, makes a number of wrong predictions for LBC violations -- a DP in Spec DP is not included in DP and therefore should be able to extract:

(3a)*   Whose did you see girlfriend?
(3b)*   Wessen hast du Frenndin gesehen?   ((8a,b) p127)

Since in these cases Spec DP is filled (*whose*, *wessen*), extraction from DP would lead to strong subjacency violations. The expectation that extraction from such genitive DPs should be difficult in LF is borne out. Similar to the PP cases, the focusing particles do not take part in feature percolation and pied-piping -- and since percolation is through the agreement system, the minor functional heads not being part of the agreement system, percolation does not take place. So QR must apply directly to the phrase quantified by a particle. Scope

facts are thus predicted by the theory of syntactic movements. A copy theory of movement gives the right results for the quantifications (52-54 on p144).

Unlike in PPs, in DPs the Spec DP can be accessed by QR which hides the barrierhood status of the DP. QR, crucially for Bayer, is a movement to a specific Spec position. This makes the parallelism between overt and covert movement striking. This is also in tune with one school of research in Neg-criterion /wh-criterion where QR is through spec-head.

Adjectival phrases (topic of discussion of chapter 5) select a DP complement to the left but a PP complement can occur on either sides of A. For Bayer, the post-adjectival position of the PP is a case of extraposition. The fact that eaxtraposition from the DP selected by A is possible again points us towards CGH. Most of the chapter develops the theme initiated in the previous chapter -- i.e. to show that QR is not adjunction.

In the case of PPs, extraposition is not obtained if the PP is quantified by a focusing particle. Bayer then goes on to argue against the traditional rightward movement analysis of extraposition and an analysis based on Kayne's (1994) claim that SVO as the universal word order. To argue against the latter, he cites the possibility of allowing optional movement as the necessary evil. However, he had earlier (p133) mentioned a similar possibility in connection with preference matrix between an ambiguous state and an unambiguous but QRed state. Bayer adopts an analysis similar to Hoekstra (1987). This third option is to do with the availability of the post-adjectival PP in an A (rather than A')-position. However, he rejects the option of its being base generated to the right of A as that would violate UTAH. He settles for an "argument shift" approach to extraposition which looks at an output like [$_{AP}$[$_{AP}$ e$_i$ A] PP$_i$] with partial blindness where the PP bears a *head* relation to A and "A simply selects PP to the right" (on p166). This would be considered strange within Chomskyan linguistics.

This brings us back to my reading of the book which is that it offers us an alternative way of looking at systems within the broader boundaries of a mainstream Chomskyan framework. This tension is becoming increasingly visible in current syntactic research. This voice, coupled with the long-standing tradition of German linguistics in providing solid alternatives brings about a successful, and bold, recipe that is at the same time commendable and useful. Such studies gently nudge students of generative syntax to wake up from the overdose of "mainstream" linguistics. This also applies to complex cases of PP extraction ((20-21) on p167) which uses the notions of complex heads (like {A+I}) and head percolation that essentially carry over from Bayer's earlier works.

I am, however, not entirely sure how far such alternatives can be stretched. For example, in section 5.4, while discussing the motivation for extraposition, Bayer talks about "softer" constraints. Extraposition for him seems to be 'linked in a transparent way' (p169) to the human processing system. If we agree that rightward movement exists then it would be meaningless to propose a different *type* of constraint. Whether extraposition 'optimises the sentence for the processing system' (p170) is far from decided in the current state of generative grammar and can at best be a speculation.

Bayer also proposes a 'semantic' head, Prt, which is 'created' in the course of the LF derivation and projects PrtP which dominates the AP undergoing extraction. SpecPrtP, which is licensed by the empty head Prt, accommodates the moved [PRT XP]. A landing site for QR strengthens his argument, initiated in the last chapter, that QR rather than being an adjunction, targets a specific position like SpecPrtP. In providing a landing site for QR, Bayer broadly anticipates similar moves made by the advocates of the Landing Site Theory at UCLA (Stowell, Beghelli, Szabolsci et al). Although, the spirit of this analysis carries over to a large extent to the analysis of scope marking in Bangla discussed in Chapter 7, the process of semantic identification, like semantic feature checking, is not independently motivated. In fact, in order to cover the full range of data, Bayer is forced to formulate a sub-rule of spec-head agreement ((33) on p174). However, his main contention that quantified PPs which end up on the *wrong* side of the adjectival head behave as islands in terms of scope facts, remains.

The rest of the book (chapters 6 and 7) covers almost half its size. They look at bigger structures. Chapter 6 looks at VPs and extraposition of clausal complements and chapter 7 discusses the scope of wh in Bangla. Chapter 6 does three things: it carries on the move suggested in chapter 5 to build an adjacency requirement between C and V based on "complementiser visibility", it claims that CPs with [PRT XP] are different -- a sub-plot that we encountered in chapters 3-5 -- and it shows certain CPs to be islands for LF movement but not

overt movement. The parallelism between overt/ covert syntax seems to break down but the resulting differences are exactly the ones motivated by the directionality parameter.

In German, the (finite) clausal complement of the verb appears to the right (*Nachfeld*), in violation of the directionality parameter. For reasons of Uniformity of Theta Assignment Hypothesis, a post-verbal base-generation approach is unsuitable. Computation of operator-variable relation leads to complications due to A' traces present in a standard extraposition analysis. One complication for C-visibility is "short" centre-embedded CPs which occur pre-verbally ((10) on P192). Bayer circumvents the problem posed by these 'marked' options by reanalysing them as NPs. This point probably deserves far greater attention than it gets considering that a vast literature exists on reanalysed non-finites.

Bayer argues for a rightward argument-shift of CPs on the basis of the fact that this movement is 'almost' obligatory and that extraction is permitted from extraposed complements. This would argue against such positions being considered as A'. What drives argument-shift, however, remains unclear since the only thing it achieves is C-visibility which is only a descriptively sound observation. After CP extraposition, the computable structure of $[_{VP}[\text{ V CP}]]$ reorients the CP is in a sister relation with the V but in the non-canonical direction, VP, therefore, must be a barrier for CP. This is shown to be operating most clearly at LF (inability to reconstruct, for example). The theory correctly accounts for cross-linguistic evidence that, for example, in English, quantified CPs canonically selected to the right will undergo movement to a scope position.

Giving evidence from verb raising, Bayer claims that right branching structures are exceptional in head-final languages which follows from Bayer's theory that head-final setting of the directionality parameter implies that right branching VPs are directionality barriers.

Another major theoretical claim of this chapter is that there is no long wh movement from right hand complements in German. As an alternative to the movement analysis, Bayer considers the operation of Generalised Transformations (GT) -- free insertion of one phrase marker into another; after all, wh scope is logically independent of movement. Bayer's mechanism involves a free insertion of a wh-phrase at the root Spec CP. The inserted wh-phrase is included in a wh-chain extended from lower clause(s). This implies that chain formation is more basic than movement. Thus, Bayer advocates a mixed system involving both derivational and representational systems, which purists may find difficult to accept. However, there is no a priori reason not to opt for a mixed system.

In the concluding chapter Bayer looks at complementation and wh scope in Bangla to test the theories developed in chapters 1-6. Since Bangla does not allow wh-movement but exhibits complement clauses on both sides of the verb, it serves as a good testing ground for the theory. Thus the theory would predict that extraposed clausal complements would only permit narrow scope readings (since they are on the non-canonical or "wrong" side the V), while canonically selected complements allow for wide scope construal as well. Bangla, and other Indo-Aryan languages, bear this out.

Bayer's initial apologetic statement, that the chapter remains sketchy because of 'looking through the optics of instruments which have been developed in the study of languages very different from eastern Indo Aryan languages', undermines the basis of UG. However, in the same breath, the claim that the explanations offered for one IA language (Bangla in his case) need not apply cross-linguistically to other languages (like Hindi, Marathi and Oriya) of the same language family, reinstates UG as operative. Again, Bayer shows convincingly that classical extraposition analyses do not explain a number of facts about binding into and focusing of extraposed CPs. The analysis from earlier chapters carries over as the verb "reselects" the rightward extraposed CP as a sister which explains the binding and focusing facts.

In Bayer's analysis both *je* and *bole* are complementiser heads, the former being clause-initial and the latter, clause-final. C-visibility, developed in the previous chapter, predicts that *je*-clauses can appear only to the right of the matrix verb. According to the theory developed so far, the Bangla VP, therefore, must be a directionality barrier for movements from a rightward A-position.

This sets the stage for Bayer to investigate scope of wh-in-situ in Bangla. He argues that unlike in Japanese, Chinese or Korean, Bangla K-words (for example *ki* as a clitic element) have an inherent +wh feature that needs checking at LF. He argues strenuously, adducing data from Assamese, that wh-movement in Bangla cannot be a QR-type adjunction and that LF movement targets essentially the same position as overt operator movement (as in the case of the relative operator *je* moving to Spec CP) -- the standard wh-in-situ stance.

Bayer provides empirical arguments against treating rightward complements in IA languages as adjuncts and in keeping with his general theory, accounts for the data by ascribing argument status to the extraposed CP. This explains why in (9), *ke* can never get wide scope:

(6) ora Suneche [ke aSbe] "they heard-PTS3 who come-FUT3"

(i) they have heard who will come (ii) # who have they heard will come?

By being "included" in the VP, the extraposed CP turns the VP into a directionality barrier for the complement. If it were an adjunct, VP could not have been a barrier and the scope facts would remain unexplained. However, in the last section, Bayer discusses an apparent case of wh-movement where the barrier status is circumvented by the process of feature-absorption and GT. By providing a clause-internal projection (CLP or Clitic-P) above the VP ((88) p295), this is shown as *not* a case of trans-clausal movement.

If we take the metaphor of a mixed system seriously, Bayer's book certainly manages to create a place for itself among the modern day tensions of generative linguistics. If the currently prevalent theory were to posit that not all movement is feature-driven, then a Bayer-type rightward argument-shift extraposition would become more "acceptable". This, however, would only serve to put Bayer's account back in the "permissible" realm of the "mainstream" program, a move which -- going by the reading of the book offered in this review -- deviates from the spirit of the work.