ORDER IN MINIMALISM: ABDUCTIVE REASONING

Abstract: *The paper addresses one of the most important topics of minimalism – word order. Progress in contemporary modern linguistics is characterized by the "tacit" necessity to involve in linguistic theory various concepts such as rules (cf. phrasal vs transformational), empty categories vs the application of MOVEα, heads vs complements etc. which form the spine of linguistic thought. The common trait of these tacit concepts is word order which represents/is represented by linearization. Concepts in this field (e.g. occurrence, position) were established by famous logicians, such as Quine, Carnap meeting with scant interest from prewar Czech linguistics, and even linguists in Europe and the US. Progress in the study of word order is driven by the idea of the dominance of a certain ordering. The ordering subject-predicate-object is considered a basic order in modern linguistics. Why? The answer, I believe can be found in the hypotheses presented below.*

Keywords: *minimalism; abduction (hypothesis); (word)order; linearization; universal grammar*

Role (slovo)sledů v minimalismu – zdůvodnění abdukcí

Abstrakt: *Článek je věnován stručnému výkladu pojmu (slovo)„sled" v minimalismu. Pro vývoj současné (poválečné) lingvistiky je charakteristické zavádění pojmů, jako je frázové vs. transformační pravidlo, prázdné kategorie vs. výsledky uplatnění tzv. MOVEα, hlavy a komplementy, které dnes tvoří páteř moderní lingvistiky. Jejich společným příznakem je slovo-sled, který reprezentuje a je reprezentován linearizací. Při hlubší analýze linearizace byly analyzovány takové základní pojmy, jako je výskyt, pozice nebo uspořádání, významnými logiky, jako byli Quine, Carnap apod. Česká lingvistika tohoto předválečného období jejich pracím nevěnovala pražádnou pozornost, taktéž ne v USA či v Evropě. Rozvoj studia (slovo)sledu je spojován s dominantností určitého uspořádání, za které je považováno uspořádání subjekt-predikát-objekt, dominantní v řadě jazyků. Proč? Autor se snažil nalézt odpověď v hypotézách na konci článku.*

Klíčová slova: *minimalismus; abdukce (hypotéza); (slovo)sled; linearizace; univerzální gramatika*

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1. Introduction

This paper is devoted to an analysis of the process of linearization which has a dominant role in the structure of Chomsky's minimalist program. The analysis is based on two different sets of concepts which represent two faces of one interface: descriptive, i.e. representing word order forms, and process-forming, i.e. reflecting how linearization is established in speech production.

The introduction of concepts as a means of analyzing linearization dates back to the beginning of 13–14th centuries when the first attempts were made to find a universal grammar (UG). The most decisive and important is the *Grammatica Speculativa* (GS) of Thomas of Erfurt,[1] from the first decade of 14th century whose syntax *(diasynthetica*) was based on the relations between individual "labels" ascribed to parts of speech forming syntactic pairs (the metalinguistic approach is presented in the part of GS called *Proemium auctoris*). The procedure is comparable to the principles of immediate constituents (IC) analysis, though not to dependency grammar because fixed word order attributed (artificially) to Middle Ages Latin is the input of the whole syntactic procedure.[2]

It is not without interest that in the *Concise Encyclopedia of Syntax*[3] which is conceived as a representative handbook of syntax, word order is analyzed by A. Siewerska[4] only on the representational level (well-known {SVO} order) while the problem of linearization in GB and minimalism is not mentioned nor is the processual aspect of linearization speech. This is doubtless due to inadequate study of free word order languages of the Slavonic type. Free word order in Slavonic is motivated by the fact that there

Dedicated to my teacher in semantics.

[1] Thomas of ERFURT, *Grammatica Speculativa*. London: Longman 1972.
[2] *Cf.* Michael A. COVINGTON, *Syntactic Theory in the High Middle Age, Modistae Models of Sentence Structure*. Cambridge: Cambridge University Press 1984; Michael A. COVINGTON, "Grammatical Theory in the Middle-Ages." In: BYNON, T. – PALMER, F. R. (eds.), *Studies in the History of Western Linguistics. In Honour of R. H. Robins*. Cambridge: Cambridge University Press 1986, pp. 23–42; Michael A. COVINGTON, "A 700-year-old Argument for a Syntactic Transformation" [online]. 2000. Available at: <http://www.ai.uga.edu/mc/trans700.html> [cit. 8. 2. 2014]; Miroslava AUROVÁ, "Word Order in Speculative Grammar." In: PALEK, B. – FUJIMURA, O. (eds.), *Proceedings of LP' 2000*. Prague: Karolinum 2001, pp. 425–440.
[3] BROWN, K. – MILLER, J. (eds.), *Concise Encyclopedia of Syntactic Theories*. Oxford – New York: Pergamon 1996.
[4] Anna SIEWERSKA, "Word Order and Linearization." In: BROWN, K. – MILLER, J. (eds.), *Concise Encyclopedia of Syntactic Theories*, pp. 372–378.

are deviations from the basic word order which are described as a product of FSP theme, rheme, topic, comment etc.

Linearization was a covert problem in the whole development of generative grammar (see phrase structure rules and transformational rules) and was opened explicitly in the minimalist program in the last decade of the 20th century.[5]

In minimalism the main question is how to arrange a set of lexical items (LI), members of N, into a syntactic structure. There are three minimal goals: first, to create a syntactic structure with respect to a selected N (i.e. to establish dominance relations); second, to decide whether the derivation of the syntactic structure of the selected N is possible or whether it will crash; third, whether a preference relation has to be established or not. Another important question is when linearization is valid in the model of the minimalist program – before or after *Spell* out; if after, whether it is relevant also for LF (logical form).

The predominance of the minimalist approach lies in the fact that no rules (phrasal or transformational) need to be anticipated. Their anticipation led in generative grammars (namely in the Standard Theory – Chomsky 1960s) of languages with so-called free WO to an enormous number of both kinds of rules and to the loss of economy of grammar. The same is valid for UG, where the theory is limited to operations such as phrase structure rules, Move etc. their general principles, but not to the creation of grammatical categories and their application, i.e. to the mapping of the actual derivation of the syntactic structure.

2. Linearization

The study of linearization was introduced in GB and minimalism by Kayne[6] in his Linear Correspondence Axiom (LCA) and later modified by Uriagereka,[7] Epstein[8] and others. It rests on the assumption of the singular-

[5] *Cf.* Noam CHOMSKY, *The Minimalist Program*. Cambridge, MA: MIT Press 1995; Noam CHOMSKY, "Minimalist Inquiries: The Framework." In: MARTIN, R. – MICHAEL, D. – URIAGEREKA, J. (eds.), *Step by Step*. Cambridge, MA: MIT Press 2000, pp. 89–155; and his other studies from the 90s.

[6] Richard S. KAYNE, *The Antisymmetry of Syntax*. Cambridge, MA: MIT Press 1994.

[7] Juan URIAGEREKA, *Rhyme and Reason: An Introduction to Minimalist Syntax*. Cambridge, MA: MIT Press 1998. Juan URIAGEREKA, "Multiple Spell-Out." In: EPSTEIN, S. D. – HORNSTEIN, N. (eds.), *Working Minimalism*. Cambridge, MA: MIT Press 1999, pp. 251–282.

[8] Samuel David EPSTEIN, "Un-Principled Syntax: The Derivation of Syntactic Relations" In: EPSTEIN, S. D. – HORNSTEIN, N. (eds.), *Working Minimalism*. Cambridge, MA: MIT Press 1999, pp. 317–345.

ity of the order scheme <Specifier Head Complement> and specifically word order SVO. If this assumption is accepted, then the title of my paper about discontinuity is wrong,[9] since no order variability exists according to Kayne.

The universality of SVO was challenged fundamentally by Fukui Takano who introduced *Demerge* as a top-bottom process, by means of which SOV arrangements are assumed universal and singular.[10]

I assume[11] that free WO languages require a differentiation between system word order (SWO) and functional word order (FWO). SWO in free WO languages is comparable to the word order of languages with fixed WO. The object of SWO analysis is to find languages, not conditioned by context and/or situation. The application of the concepts topic focus etc. has to be relation-bound based simultaneously on phonetic concepts, intonation, sentence stress, with breath group etc. These concepts are very often conditioned by external context, based on the theory of discourse. There "sentences" are very complicated, like complex sentences or periods in Latin (cf. Cicero, Ovid). Their derivation shows that their syntactic structures, based, for example, on the application of pronominalizations, are conditioned by previous sentences. Chomsky's definition of language is limited by sentence boundaries. Such a definition also covers Latin periods.

This is why I think that the concept of free word order has to be parceled into pure syntactic phenomena, and the rest into phonetic and functional phenomena.

For a meaningful typological analysis of syntactic concepts it is essential to analyze individual syntactic concepts according to the same principle. Thus we can derive the subject either with respect to its position (English, Japanese etc.) or with respect to inflection (cases) which specify the relevant syntactic features.

[9] Bohumil PALEK, "Discontinuity." In: HARAGUCHI, S. – FUJIMURA, O. – PALEK, B. (eds.), *Proceedings of LP 2002*. Prague: Karolinum 2006.

[10] *Cf.* Naoki FUKUI, "Parameters and Optionality." *Linguistic Inquiry*, vol. 24, 1993, no. 3, pp. 399–420; Naoki FUKUI, "The Principles-and-Parameters Approach: A Comparative Syntax of English and Japanese." In: SHIBATANI, M. – BYNON T. (eds.), *Approaches to Language Typology*. Oxford: Oxford University Press 1995, pp. 327–372; Bohumil PALEK, "Item Orderings and Scrambling." In: FUJIMURA, O. – JOSEPH, B. D. – PALEK, B. (eds.), *Proceedings of LP '98*. Prague: Karolinum 1999, pp. 593–632; Bohumil PALEK, "Notes on Clitics and Linearisation." In: FUJIMURA, O. – PALEK, B. (eds.), *Proceedings of LP 2000*. Prague: Karolinum 2001, pp. 398–423.

[11] See in my previous papers: PALEK, "Item Orderings and Scrambling"; PALEK, "Notes on Clitics and Linearisation."

3. The difference between occurrence, position and the precedence relation

At the input of the minimalist program is a set of lexical items (LIs) which are only assumed not specified. Through Merge the settings of the linearization of LI are established (not necessary pairs). By means of Merge we can introduce the concept of occurrence.

Quine[12] defined the occurrence of an expression as zOyx, where z is an occurrence of x, and x in y is an initial segment of y ending in x.[13] The definition of the occurrence variable x is related to the description of the expression in first order logic. Thus variable x can have different specifications – bound or free. If x is bound then it has to be related to an earlier occurrence, x being quantified. In general, a variable is bound if it is related to a function of whatever kind, usually in a previous occurrence.

The precedence relation is a relation defined only between bound units, i.e. functions by means of which terminals are related, i.e. nonterminals. (Chomsky's statement[14] that in the minimalist program nonterminal symbols, categories, arc omitted, concerns a priori nonterminal vocabulary, not the fact that compatibility of terminals has to be enabled by certain interpretable features). This is a strictly nominalist approach enabling the creation of monadic predicates such as V etc. Nonterminal a precedes b iff a does not dominate b or b does not dominate a. Thus the sequence of nonterminals <a b> differs from <ba> by occurrences of a and b as bound variables, the same is valid for bound variable y. In bare phrase grammar two LIs are related if certain conditions hold (features compatibility, in general). Due to their compatibility (supported by the checking theory) they form a unit, say {a, b}, which can be represented as <a b> or <b a>. The unit {a, b} can be joined with y to form either {y, {ab}} forming thus <y <a b> or <a b> y>. In the famous example

(1) (the (young girl)) (loves (a boy))

we see that there are no differences between the bound variables; there are no non-terminals in the sentence which are not bound.

[12] Willard Van Orman QUINE, *Mathematical Logic*. New York: Harper & Row Publishers 1962, p. 297*ff*.
[13] *Cf.* also Richard M. MARTIN, *Truth and Denotation: A Study in Semantical Theory*". London: Routledge and Kegan Paul 1958, p. 84*ff*.
[14] CHOMSKY, *The Minimalist Program*.

In (1) linearity is established by the specification of relatively ordered items e.g. whether an item precedes (or immediately precedes) the other etc.

4. Heads and LCA

In Palek[15] I demonstrated that in Czech, Armenian, Japanese and in many other languages Kayne's idea of the singular order Specifier (S) Head (H) – Complement (C) is not valid. In contrast to Chomsky[16] I claimed that the difference between S and C is not determined by the relative order wrt H, i.e. that S precedes and C follows H. I stated that there are no theoretical grounds for Chomsky's claim and that a more general definition of S, H, C could be based on the fact that S differs from H and C, H differs from S and C from S and H by whatever grammatical means: positions, affixes etc. are used.

This means that the unit {a, b} is bound by ? (a symbol determined exclusively by features which have to be compatible with the features of {a, b}. Such a procedure enables the categorization of linguistic events in the form of non-terminals which have had a decisive role in previous versions of generative grammar. Non-terminals used in syntactic structures serve for a better organization of information in the understanding of syntactic structure. This is why non-terminals cannot be considered signs-symbols because ? can be empty.

Compared with Quine's and Martin's definitions of occurrence any LI in bare phrase grammar is bound, not free. This is why any LI is, through the syntactic structure, relatively positioned with respect to another LI. Kayne's SHC idea is the mainstay of the Linear Correspondence Axiom (LCA). The key concept of LCA is the Asymmetric C-command (ACC) defined by Kayne[17] thus:

(2) X asymmetrically c-commands Y iff X c-commands Y and Y does not c-command X.

where ACC is determined by the sequences <J, M> <J, N> ,<J, P> and <M, P>. d(A) is thus <j, m>,<j, p>, <m, p>. Kayne demonstrates LCA and ACC on the phrase marker (3):[18] (here in linear notation)

[15] PALEK, "Item Orderings and Scrambling"; PALEK, "Notes on Clitics and Linearisation."
[16] CHOMSKY, *The Minimalist Program*.
[17] KAYNE, *The Antisymmetry of Syntax*, p. 4.
[18] *Ibid*., p. 7.

(3) [[(j)] [[(m)] [[(p)]]]]]
K J L M N P

which was discussed in many works relating to the GB (Government and Binding), PP (P and minimalist programs, especially by Uriagereka,[19] see next.

(4) LCA is: d(A) is a linear ordering of T.[20]

where A is the set of ordered pairs $<X_j, Yj>$ such that for each j, Xj asymmetrically c-commands Yj and A is a maximal set of such pairs (T, is the set of terminals.) and where, (see 5) <S H C> is accepted. The remaining SCH, CSH, HSC, HCS are excluded (Kayne 1994: 35). (I shall show that CSH and HSC are not derivable for quite different reasons than are introduced by Kayne.) The phrase marker represented by the structure of ACC is a tree containing the set of nodes {K, J, L, M, N, P, j, m, p} and a set of dominance relations defined on the grounds of the given set of nodes.

If a detailed analysis of (3) is undertaken then we shall see where L c-commands J and J c-commands L and in accordance with ACC J asymmetrically c-commands M, N, P and M N do not c-command J. This is why the sequences <J, M>, <J, N>, <J, P>, are ordered from right to left and <M, P> ordered from left to right in contrast with this phrase marker. But the next one is the same phrase marker as the first with respect to the dominance relation. Thus we can derive on the basis of the given phrase marker four representations of the phrase marker and thus various orderings with the same dominance relations which respect ACC.

If we take into account a particular sequence of branched non-terminals then I shall call the set of possible orderings which could be derived the root phrase marker. Kayne's statement that SOV order can never be universally valid for all languages is not only counterintuitive but formally misleading. The precedence relation is not used in the definition of c-command and ACC. To include the precedence relation in ACC and thus secure the existing order means that the precedence relation must be defined with respect to each pair of nodes. For every pair of a and b there must exist a node immediately dominating both a and b and thus a c-commands b. In the case of (4) this would apply to J L and M N. In the case of P the dominance relation

[19] URIAGEREKA, "Multiple Spell-Out."
[20] KAYNE, *The Antisymmetry of Syntax*, p. 6.

is sufficient for determining its position (this is why terminals and branched non-terminals are not taken into account).

5. Precedence and lndirect precedence relations

(5) If a c-commands b then either a precedes b or b precedes a. If a asymmetrically c-commands c and a precedes b then a indirectly precedes c.

The indirect precedence relation (IPR) is necessary for the order of branched nodes in the phrase marker.

The main issue which has to be addressed is how various orderings are enabled and whether certain languages have a basic word order which is decisive for the ordering of syntactic objects in a phrase marker. The next question with respect to the minimalist model is whether orderings are derived in pre Spell out or after Spell out. In other words, is word order the subject of phonetic representation and/or is it valid for UG (basic WO).

Let us assume that the sequence <c, a {b}> c, a b is a basic sequence in Uriagereka's sense,[21] this word order corresponds to a syntactic object (3d), i.e. SHC. (Graphical representations 3a-3c on p. 25. This includes also discontinuous graphs which cannot be derived). Unlike Uriagereka I do not consider it the most natural or most comprehensible structure. There are no objective reasons to assume this. Why cannot (3c) be the best interpretation'? Is it only that we as native speakers of English or some other language are familiar with this order?

Uriagereka[22] defines LCA(U) differently from Kayne:

(6) A) Basic step: If a c-commands b, then a precedes b
B) Induction step: lf c precedes b, and c dominates a, then a precedes b.

The basic difference between Kayne' and Uriagereka's definition of LCA involves the precedence relation in LCA due to the application of Merge and the computational character of minimalism. By means of LCA(U) Uriagereka defines the command unit (CU) as a syntactic object which, in accordance with Merge, creates the phrase marker from right to left. This process has to be continuous, not interrupted, cf. Uriagereka,[23] where the

[21] URIAGEREKA, "Multiple Spell-Out," p. 253*ff*.
[22] *Ibid*., p. 252.
[23] *Ibid*., p. 2.

discontinuous application of Merge creates separately assembled syntactic objects; Uriagereka based his theory on the dynamic minimalist approach.

The problem with sequencing starts from the second step of merging. The first – if a and b are merged with a label a′, and the label maps the resulted object then the domination relation is between a and a′ and b and a′.

It is no problem to say that a precedes b or b precedes a. The problem is the second step when the merge takes into account the previous step and that forms from c and a′ a new label say a′, the projection of the head a. The resulting sequence could be ca′ or cab. But how do we obtain the sequence inside the sequence ab or ba?

Both in Czech and in Japanese due to inflection the head features of O and V are interpretable. They can be merged and, by merging, form a syntactic object

(7) V′ {V,O}

This is a standard merge forming domination between V′ and O or V and V′ is then merged with S forming a new syntactic object with dominance relations.

The difference between standard merging and the following procedure is that the relation of dominance and command (even asymmetric) is not related to the precedence relation, in other words, the precedence relation is not derived from dominance.

Let us consider d and r as diagrams, trees, defined in graph theory as

(8) G= {N} {R}

where R is an asymmetric relation and is defined on the basis of selected lexical items N in such a way that there is no circle in the graph.

Let us consider them as trees, ie. a representation resulting from the mapping of derivation by Merge. Let U denote the UP relation in such a way that x is up to y if there is no z which is in up relation to y.

(9) X *z or *z X
Y Y

U is an asymmetric relation: y cannot be in U to x. If we take into account transitivity, then the number of orderings will be the same for Uriagereka's examples.[24]

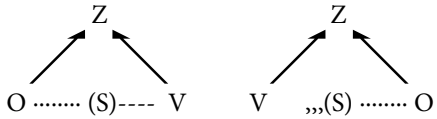
In the typology of basic word orders it is assumed that there do not exist languages with discontinuous basic order, e.g. OSV, VSO. In assuming the real existence of such WOs we need to find the most suitable form for their description, not accepting crossing.

I have, up to now, only used nodes which have labels for differentiation. The nodes in Uriagereka's examples are labeled with respect to projection. If two symbols are merged then there is one – and only one – projected label.

Here is Uriagereka's argument: – only the relation from right to left is applied, see the metaphorical explanation "I have merged with your ancestors". As he explains in his paper two separate command units cannot be merged and thus a discontinuous application of merge is impossible. This statement seems to me incorrect because discontinuity is done by the relation B not U, and U is the same for a-f.

How is it possible to derive the discontinuous orders OSV or VSO? In several previous studies I assumed that it could be possible by including the nodes expressing the various forms of their position. The problem is that I did not know how to encompass these nodes in syntactic derivation, see the intuitive image:

(10)



where Z is a label of O ... V or V ... O (O – object, S subject, V – verb).

In accordance with standard procedure the order of O or V delimited by maximal projection is before or after the rest. But we need to include S inside the orders of O and V. For this purpose I introduced in the previous paper[25] the concept *split position*. Split position is a position that is occupied by any term, which is located wherever at any intermediate level.

Generally speaking it could be defined as K′= {{X {Y ... Z}, γ}} such that ... is a split position that can host X^{max} in any position of the syntactic object

[24] *Ibid.*
[25] PALEK, "Notes on Clitics and Linearisation."

labeled γ. The syntactic object K′ is an abbreviation for a complex syntactic object consisting of two basic syntactic objects: {X′{X ... Y}} and {X′ {X′ ... Z}} which satisfy the principle of binarity.[26] For the determination of the possible orders of {SHC} it is necessary to introduce syntactic objects as triplets. To specify the order of triplets we have to determine not only the head but also its specifier and its complement. Assuming anti-symmetry we obtain the following structure:

(11) HP { [S [H′ } H C]

We can, of course, ask how to obtain such structures by Merge. To me it is evident that this has to be guaranteed by lexicon. The lexical items as potential heads have to contain information about the split positions, either left or right, somewhere among the features relevant to the head.

Thus, if the head is V, then the information that the split position is to the RIGHT leads us to obtain VSO: if it is to the LEFT we obtain OSV and the head is in such a case HP.

This proposed solution is not yet finalized and there are open questions, namely how to use the sequence of MERGE applications.

The background of LCA is derived from the hypothesis that the syntactic object (H′, HC) is part of the syntactic object (SH′). This hypothesis is 11 a e: B (y, z) B (z, x)

(12) b f: B (x, z), ..., B(z, y)

3a-d has three pairs of relations B. e-f have two pairs of relations B. In other words the pairs of relations B map the process of structure-creation as linear but the U structure does not.

Instead of the above mentioned U pairs and B pairs, it is easier to draw trees on sheets of paper. But it is necessary to take into account, that the trees reflecting e, f need to be drawn in various ways but without crossing the x-t or t-x line.

This proposed solution is not yet finalized and there are various open questions. For instance, how to describe complex sentences, like Latin period; whether the split position in a lexical item must always be related to the maximal projection, or to a category which is "higher".

[26] *Cf.* CHOMSKY, *The Minimalist Program*.

6. Three hypotheses relating to head domains

The background of LCA is derived from the hypothesis that the syntactic object (H′, HC) is part of the syntactic object (SH′). This hypothesis is motivated by the traditional syntactic idea of the V domain. Clauses containing only a subject are less specific than clauses containing also an object and predicate. Is this hypothesis single when applied to a description of syntactic structures? Any syntactic structure contains one head which is located at the top of the syntactic structure, heads are joined with properties at an intermediate level, either a dominated or dominating level, projective or non-projective etc.

Let us assume that {S {HC}} is the shorthand for any projective sequence such as <S H C>,] { { <S C H> etc. {S {HC}} is represented by the scheme:

(13) [{ S { H C } } ⌈ { { S H } [{ S } }] [{ { { H }]] { C } }]]
HP H′ S H^0 C

This scheme does not support the derivation of non-projective syntactic structures <HS C> and <CS H>. If these sequences are drawn to fulfill all combinations of sequences then it is because of the ideology of this hypothesis to demonstrate the full content of the starting scheme.

Is the mentioned hypothesis the only one possible? For Europeans versed in traditional school grammar the quick answer is NO! But why not assume another hypothesis motivated by the V (H) domain based on the assumption that the object (complement) is added to the syntactic unit subject and verb (i.e. specifier and head). In traditional grammar, namely school grammar, sentence parsing starts with the process of determining a "simple clause", i.e. syntactic unit – subject and predicate. A complex sentence is formed from a simple clause and another syntactic unit, such as an object. This hypothesis is based on a different view of asymmetric c-command: C asymmetrically c-commands S and H.

The shorthand { {SH}C} in contrast with the above mentioned standard enables the derivation of <HS C> and <CS H> sequences as projective ones, but not the sequences <S C H> and <H C S> which are, if they are drawn, from the point of this hypothesis non-projective. The scheme reflecting the second hypothesis is:

(14) [{ S H } C } } [[{ { S H } [{ { S }]]] [[{ H } }] { C } }]]
HP H′ S H^0 C

The intermediate level of the head, H′, subsumes a specifier, and HP subsumes C and H′. Thus the second hypothesis is inverse to the first one with respect to S and C.

The third possible hypothesis is { {S,C} H} which is syntactically motivated by the traditional idea that a V domain contains a subject as the dominant part of a sentence and an object related to the subject. This means that the object cannot be compatible with every subject, e.g *Paul is expecting a girl* but not *the dog is expecting a girl* (the verb *expect* could be merged with the name of the person but not with NON-human). The subject and object can be in close relation. This holds true of the pronominal system of several AI languages such as Dakota where fusion of the object and subject is standard. The scheme reflecting this hypothesis is

(15) [{{ S C } H } } [[[{ { S C } [{ { S }]]] [[{ C } }]] [{ H } }]
HP S′ ? S C H′ or H^0

{S′} is an intermediate level of the head S. This hypothesis enables something like two dominant heads in syntactic asymmetry, i.e. S and H. Similarly as the previous hypothesis it supports <HSC> and <CSH> as projective, it also supports <SCH> and <HCS> as non projective in the second hypothesis. In contrast with the previous two hypotheses the sequences <SHC> and <CHS> arc non projective.

The third hypothesis appears peculiar because the syntactic asymmetry is dispersed in two heads the characterization of which differs. The third hypothesis is applicable to VSO languages like Amis (language of aborigines in Thai wan).

Comparing these hypotheses we can find the following common properties:

The 1st hypothesis, in general, does not allow S in the second position in any of the derived projected sequences. The specifier is thus either at the beginning or at the end of the derived sequences.

The 2nd hypothesis does not allow C in the second position of the derived sequences. The complement can thus be located either at the beginning or at the end of the derived sequences. This comparison confirms that the second hypothesis is inverse to the first one and vice versa. The position of the head varies in individual sequences and is not a specific trait of any of these hypotheses.

The 3rd hypothesis excludes H in the second position of the derived projected sequences. The head is thus either at the beginning or at the end of the derived sequence.

7. The role of hypotheses in UG

The intuitive idea of UG is based on its universality for all languages. The UG system difference between principles and parameters leads to the question whether the three hypotheses can be considered as parametric, or whether there is one which could be considered as a principle. The individual hypotheses have a decisive influence on the disposition of S, H, C order. Is the word order of individual head domains a parameter or principle in UG? The discussions about the universality of SHC (SVO) order concern the process of linearization and its place in UG. The first hypothesis seems to be more universal than the' second and third ones because it is the only one which enables both SHC and SCH order.

The first and the second hypotheses arc akin as to the domain relation, only their arrangement in phrase structure differs. The third hypothesis differs from the previous substantially, it contains a different dominance relation, S´S, S´C. Thus the phrase structure differs not only in the arrangement of dominance relations. There is the question how the procedures of derivation, namely Merge and Move will be applied with respect to these parameters, i.e. whether we shall be able to find universal principles for their mutual relationships.

Let us demonstrate the problem concretely. The root phrases derived from individual hypotheses reflect only the dominance relations. Let {g, {a, b}} be a syntactic object with the label g. In accordance with the first hypothesis the next object merged with the first one formed {e { d, g} } where a, g, e, arc H H´ HP respectively, b is C and e is S. If the second hypothesis is applied, the structure is the same but d is C and b S. This difference is guaranteed by interpretable features. The third hypothesis is more complicated; it differs from the second hypothesis in the interpretation of a and b, ie. S and C, g is S´ and d is H.

It is evident that these procedures have to be further elaborated in order to show the difference between the application of merge with dominance and further with linearization in accordance with LCA.

8. Conclusion

I tried to show that the general order of linguistic elements is a phenomenon which is the result of combinatorial analysis that could produce structures containing branch crossing, thus non-projected structures. Structures containing branch crossing are not the result of a systematic approach to head domain analysis. The order of the changes of syntactic structure in GB or in minimalism solved by e.g. WH-movements could be alternately resolved by deriving according to the second hypothesis rather than the first. Analogically, the mentioned hypotheses could be used to explain certain phenomena in free word order and the introduction of the split position would not be necessary.

It was my aim to show profound understanding of linguistic processes. Linguistic thinking in recent decades has greatly benefitted from related areas of study, such as computer sciences, but researchers have also tapped the numerous sources of inspiration in the works of great thinkers of the past. The study of philosophy, namely nominalism, broadens one's horizons and helps one maintain a non-dogmatic approach in research. That I found in the lectures of professor Tondl. Thank you.