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Contrastive Meanings of the Terms *"Predicative"* and *"Predicational"* in Various Linguistic Theories (I.)

Neculai Curteanu

Abstract

This paper is devoted to a problem of lexical semantics, discussing various aspects gravitating around two distinct meanings of the terms "*predicative*" and/or "*predicational*" in some important and/or of particular interest linguistic approaches, trying to build a unitary mosaic image from "rocks" representing apparently disconnected examined viewpoints on the issue. The *first meaning* of the two terms is of semantic nature and corresponds to those lexical categories that introduce a real *predication*, *i.e.* an *event-structure*, within or not the context of a *predicate*. Similar terms fitting this meaning are *(e.g.)* "*deverbative*", "*deverbal*", (and (*de*)*verbality*"), "*deadjectival*", "*nominalizations*" and "*event nominals*", "*postverbal*", "*predicator*", "*predicative*" (*predicativity*), etc., while the proper term that we advocate is "*predicational*". The *second meaning* of the above mentioned terms is assigned, in general, to those non-verbal (nominal and adjectival) categories that, together with a finite auxiliary verb complex, make up a structural, *analytic predicate*. Its syntactic nature corresponds to those categories and phrases that contribute to make up a (finite or non-finite) *predicate*, but not *necessarily* introducing a true *predication*. The two meanings are crossly pursued in several approaches of special interest, a taxonomy of the verbal and non-verbal categories based on their intrinsic feature of *predicationality* is proposed, and its consequences on natural language processing are suggested.

1 Introduction

This paper is devoted to a problem of lexical semantics, discussing various aspects gravitating around *two* distinct meanings of the terms "*predicative*" and/or "*predicational*" in some important and/or of particular interest linguistic approaches, trying to build a unitary mosaic image from "rocks" representing apparently disconnected examined viewpoints on our issue.

(**M1**) The *first meaning* of the two terms is a semantic, intrinsic one, corresponding to those lexical categories that introduce a real *predication*, within or not the context of a predicate. It corresponds to the meaning of the terms "*deverbative*" [31], [32], "*deverbal*" [33], [34], [27], [20], [35], "*postverbal*" [37], "*deverbal*" and "*deadjectival*" [20], "*nominalizations*" and "*event nominals*" [9], [1], "*predicator*" [22], "*predicative*" (*vs. nonpredicative* verbs) [26], "(*de*)*verbality*" (as "*the maximal use of the verbal character of, traditionally non-verbal categories*, N and A") vs. *predicativity* [15, p. 130], PRED (*predicational*) vs. *existential*, *non-event*, thus *non-predicational* (EXIST) features [17], [18] etc. assigned (at the lexical level) or derived (contextually) for the major syntactic categories of *noun* (N), *verb* (V), *adjective-adverb* (A), and for the (relational but not major category – in our view) *preposition* (P).

(**M2**) The *second meaning* of the above mentioned terms is, in general, assigned to those non-verbal (nominal, but not only) categories that, together with a finite auxiliary verb complex, make up a structural, analytic predicate. It corresponds, more or less, to the terms "*predicative*" adjectives (A*s*) and nouns (N*s*) [11], [31], [32], "*predicative*" NP*s* and AP*s* [32], [1], [3], "*predication*" [1], TENSE (with the values FINIte and INFInite – non-finite) features, and even (somehow improperly called) [36] "*predicational*" feature etc. assigned to those categories and phrases that contribute to make up a (finite or non-finite) *predicate*, but not *necessarily* introducing a 'true' *predication*.

The meaning (M1) of "*predication*" involves a *process*, an *action*, an *active event* etc., while the meaning (M2) does not exclude (M1) but may also include the *existential*, *objectual*, *static*, *denominational*

reading of the considered lexical categories, as opposed to an authentic predication. It is *this specific difference* that makes the (M1) *predicational feature* to be assigned and used in our taxonomy for the major syntactic categories N, V, A, and inherited by their corresponding grammatical projections. For the meaning (M1) of the term "*predicational*" it is not important the predicate, involved or not, but the *predication* beared by the category assigned to it. *E.g.*, the (clause and) predicate "(*He*) *is a child*" does dot bear a predication because both the *copulative* (finite) *verb* "*to be*" and the '*predicative*' *noun*, "*child*", are not (properly) *predicational* but only existential, denominational !

By a predication (M1) we mean a *predicational* (PRED) *head* entailing (overt or covert) *proper arguments*, as in the phrases: "gave *the book to John*" (synthetic, finite predication), "given *to my mother by John*" "integration *of the new emigrants by their host society*", "robbing *his new partners*" (synthetic, non-finite predications), "has been killed *by John*" (analytic, finite predication). Copulative verbs like "*to be*", auxiliaries or semi-auxiliaries (modal) verbs, common nouns like "*child*", "*river*", "*car*", proper nouns, adjectives like "*nice*", "*red*" etc. are considered to be *non-predicational*, *existential* (EXIST) ones. We also specify that modifiers and (generalized) quantifiers of a *head*, as well as possible *adjuncts* (*e.g.* circumstantial complements) are *not* considered to be *arguments*, since they do not constitute the pattern of a true predication.

There exist lexical (or grammatical) categories bearing naturally at the lexicon level both PRED and EXIST features for their meanings. The choice, in a concrete text, of one or the other of the two meanings cannot be done otherwise than *contextually*; *e.g.* the nouns "*construction*", "*act*" (Eng., Fr.), "*building*" (Eng.), "*clădire*" (Rom.), the verb "*bâtir*" (but much less the derived "*bâtiment*", Fr.), many adjectives derived from past participles, etc. bearing equally the PRED and EXIST features.

In the following Sections 2-11, we pursued the meanings (M1) and (M2) in several approaches of special interest to our topic, this trial being inevitably incomplete, possibly unfair and definitely unfinished for the chosen references which our investigation relies on. Section 12

summarizes our proposed taxonomy.

2 The HPSG-87 Theory of Pollard & Sag

2.1 "Deverbative" Nouns in HPSG-87

This subsection looks at the problem enounced in the introduction, relying on the framework of the well-known formalism of HPSG (Head-driven Phrase Structure Grammar) developed by [31], [32], more precisely within the HPSG-87 theory of Pollard and Sag (1987) [31]. HPSG-87 considers as major signs the categories N(oun), V(erb), A(djective), and P(repostion). While in HPSG-87, V is considered to bear naturally the subcategorization feature, and "*in general common nouns do not subcategorize for elements other than determiners and possessors,... however, some classes of common nouns in English appear to subcategorize – albeit optionally – for additional complements*" [31, p. 141]. The example considered is that of the classical '*picture*' type :

Ex.2.1.1.

(Eng) *There was a picture of Grigorescu*(,) *of a young woman.*

(Rom) *Era o pictură de Grigorescu*(,) *a unei tinere femei.*

An observation of essential importance for our investigation is made in [31, p. 141], namely that another class of English nouns which subcategorizes for additional complements are the so-called "*deverbative*" *nouns* or "*nominalizations*", defined as nominal forms etymologically related to verbs but distinct from the verbal gerunds. "*To a large extent, the optional complements of such nouns, as well as their semantic role assignments can be predicted on the basis of the corresponding verb* '*sources*' " [31, p. 141-142]. Relevant examples are given to illustrate the idiosyncratic lexical variation between the "*deverbative*" nouns and their corresponding verbal (actually, predicational) sources, such as :

Ex.2.1.2.

(*a*) *The barbarians destroyed the city.*

(*b*) *The destruction of the city* (*by the barbarians*)

[31, p. 142].

Unfortunately, HPSG-87 [31] did not deepen the investigation on "*deverbative*" nouns and, more generally, on *all* N, V, A *deverbative* categories, *i.e.* categories which, based on their valence information at the lexical level, produce at the syntactic and semantic level a finite (tensed) or non-finite (non-tensed) clause structure, and bear, independent of their *predicative* or *non-predicative* (syntactic) role, what we called here a '*predicational*' behaviour, and thus feature.

2.2 The Distinction Predicative / Non-predicative in HPSG-87

In HPSG-87, "*the binary head feature* PRD (predicative) *corresponds to the* predicative / nonpredicative *distinction, which cuts across several different parts of speech. Roughly, predicative words (or their phrasal projections) are those which can occur as complements to the copula*" [31, p. 64]. For example, among verbs, present participles and passive participles are '*predicative*', being lexically marked as [PR(E)D +], while other verb forms are [PR(E)D −].

A similar approach to *predicativity* may be found in [36] (see § 9.1), as well as in other theories.

The same distinction *predicative / non-predicative* is considered to be relevant for *adjectives*, and Pollard & Sag (1987) [31] distinguish three general types of adjectives (A*s*): (***i***) A*s* which can occur after the copula but not as prenominal modifiers (*e.g. asleep*, *awake*) receive the predicative feature value [PR(E)D +]; (***ii***) A*s* which can occur prenominally but not after the copula (*e.g. former*, *mere*, *utter*) receive [PR(E)D −]; and (***iii***) A*s* which can appear in both prenominal and post-copular positions. Most A*s* fall into this class, receive the feature [PR(E)D + V −], and are unspecified for the feature PR(E)D. This solution does not seem to be most adequate since one can give a lot of examples from various (*e.g.* Romance and Slavic) languages violating this taxonomy. An outstanding cross-linguistic, unifying analysis of the pre- and postnominal distribution of A*s*, explaining the linguistic variation of adjectival modification (and the noun phrase structure) in

terms of (conceptual-intentional and sensori-motor) *interfaces* may be found in [4].

Moreover, HPSG-87 is mixing up the auto-semantic (major) categories N, V, A with the functional category P in what concerns their *predicational* properties, it recognizes that "*prepositional phrases seem to lead a double life, occurring in both* predicative *and* nonpredicative *positions*", and inclines to consider the *nonpredicative* versions of P*s* "*as something other than* (standard) P*s*, *perhaps grouping them with* complementarizers *and other formal markers that do not seem to make a real semantic contribution. As yet, HPSG*(-87) *lacks any precise analysis of such markers*" [31, p. 65]. We support this observation, and our treatment of hierarchically organized classes of markers to be applied from single words until (and including) discourse structures in SCD (Segmentation-Cohesion-Dependency) *linguistic strategy* [17], [18] shows it.

The same ambiguous situation is found for N*s*; "*Like* PP*s*, NP*s too appear both predicatively* (*predicate nominals*) *and nonpredicatively* (e.g. *subjects and objects*)..." [31, p. 66].

The following problem arises: a predicate is normally made up of a verbal group whose syntactic head is tensed. In the special case of the nominal or adjectival predicate, this verbal group reduces to the copular verb (or complex) *to be*, and the '*predicate*' is completed with its nominal or adjectival part. Then one can appreciate that in such a predicate, *to be* represents its *syntactic head*, while the noun or the adjective completing this analytic predicate constitutes its *semantic head*. The question is: why to assign to the semantic head of the analytic predicate the purely syntactic feature PRED, unrelated to its lexical meaning, which proves clearly to be ambiguous since one can not find useful rules to discriminate between its values [PRED +] and [PRED –] ?

HPSG-87 gives a partial answer to the above question noticing that "*many important syntactic properties of phrases are determined by their* lexical head; *such properties are treated in HPSG in terms of* head features" [31, p. 67], and acknowledge that the *Head Feature Principles* and *Subcategorization Feature* remain "*at the heart of several major*

issues in current syntactic and semantic theory..." [31, p. 72].

We are convinced that is necessary a deeper understanding of the notion of *predicate*, and an unitary theory of this fundamental concept, with the aim of integrating all the syntactic shapes of this phrase, including and especially the situation of the nominal and adjectival (and, why not, untensed verbal) predicates into a single consistent approach, compatible with the regular (synthetic) forms of the predicate, and with its intrinsic, natural role of *predication* bearer.

3 The HPSG-94 Theory

3.1 Markers in Complement Patterns

Chapter 3 in HPSG-94 [32], and especially Section 3.4. (*Unsaturated Complements*), takes significant further steps toward the intensive use of markers as functional elements within their role of delimiting and dependency-establishing phrasal and clausal structures. We completely agree with the "*immediate dominance schemata*" in [32, p. 125] which

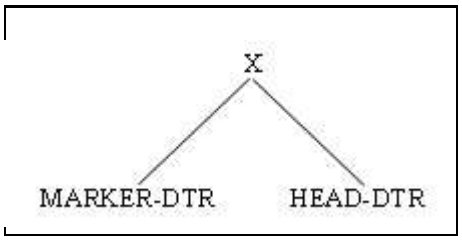

Figure 3.1. Marker Functionality

fits not only with the complementizers, but with the much larger category of markers (from *Case* to *discourse* markers) that work as functions or relations to be applied to their sister nodes X(MARKER-DTR(HEAD-DTR)). The '*considerably clumsier*' system ([8], reproduced in [32, p. 124, (65)]) of the X-bar schemes:
(3.1) *i*. VP1 $\rightarrow$ COMP VP_1

ii. S1 → COMP S

iii. S → NP VP_1 when COMP = *for*;
S → NP VP_2 otherwise

iv. VP_1 is *to*-VP and VP_2 is *Tense*-VP

(X1 denotes here the first-level linguistic projection) represents rudiments of the same more general relations in Fig. 3.1, which is, by far, embedded within the general FX-bar scheme [18, p. 70]. In [18] we propose a (general) *functional* X-bar *scheme* and *theory* that negotiates all the main types of marker functionality with the phrasal structures to which they apply.

Interestingly, the same type of relations as those in (3.1) and Fig.3.1. is again discussed by Chomsky (1995) [11], in a transient attempt to replace the X-bar theory schemes by their underlying functional relations: "*Standard X-bar theory is thus largely eliminated in favor of bare essentials.*" [11, p. 246].

The *equi* and *raising* phenomena are also explained using the same interaction of *lexical selection*, universal rule schemata, and principles of the HPSG-94 theory of universal grammar.

3.2 A Lexically-based X-bar Theory

Chapter 9 in [32] brings a really new breath for the whole standard HPSG-87 and HPSG-94 theories. The new aspects are remarkable, and bring a possibly radical change for the whole construction, concentrating in the proposal of a lexically-based X-bar theory [32, p. 362-363] and the corresponding replacement of the Head Feature and Subcategorization Feature Principles by the *Valence Principle*.

If applied uniformly to all possibly functional and relational categories, from lexical, syntactic and discourse markers to the predicational categories, and inherited from the lexical to the maximal projection grammatical categories, the effect of the Valence Principle as enounced and supported in [32, p. 348, 392], in cooperation with other principles maximizing the utilization of the lexical functionality (semantics), could change of great deal of the current configuration of the HPSG theory.

The X-bar lexical schemata for the local selection of the non-heads by a head (as well as other extraction schemata in the same Chapter 9 of [32]) can be easily embedded within the first three-up (from the four) levels of the general FX-bar scheme [18, p. 70]. (To remind that SPR and SPEC abbreviates in [32, p. 362, rel. (40)] for *specifier* and *specified* categories, respectively).

(3.2)

Head-Subject Schema X2[SUBJ $\langle\rangle$] $\rightarrow$ $\boxed{1}$ Y2, X2[SUBJ $\langle\boxed{1}\rangle$]

Head-Specifier Schema X2 $\rightarrow$ $\boxed{1}$ Y2[SPEC $\boxed{2}$], $\boxed{2}$ X1[SPR $\langle\boxed{1}\rangle$]

Head-Complement Schema XP $\rightarrow$ $\boxed{1}$, X0[COMPS $\boxed{1}$]

The mechanism of structure sharing indexes in (3.2) supply not only recurrence on the same level of projection 'locality', (*i.e.* inside the smallest maximal projection of the involved major lexical categories), but also the transition from a projection level to another, remaining however only inside the clause level and not beyond it (at the inter-clausal, discourse level).

The special situation of '*deverbative*' categories (here only the *noun*) is retaken [32, p. 374, (55b)], as in HPSG-87 [31] (see § 2.1. above), in the new context of the proposed approach in Chapter 9 [32], for the (deverbative) *predicational paradigm* {*portrait* (noun), *portrayal* (deverbative noun), *portraying* (nominal gerund), *portraying* (verbal gerund), *portraying* (nominal gerund), *portrayed* (finite verb)} (the *predicational* nature of "*portrait*" is anyway ambiguous). However, once again, HPSG-94 (Chapter 9) does not discriminate the *predicative* from *predicational* contexts, and the analysis still remains as in standard HPSG actually, within the *predicative* framework.

We wonder whether "SUBCAT *is a head feature, that is, the valence requirements of lexical heads would be reflected also on all their phrasal projections...this would be a highly undesirable result...*" [32, p. 376]. We see no harm in the possibility of making equivalent (at the lexical level of the major categories N, V, A) the SUBCAT Principle, the Valence Principle, and the *predicational* feature, all assigned at the *lexical* level, and such an equivalent property to be inherited by the *non-predicational* part of the *lexical head projection* (*i.e.* only at the level of head quantifying, modifying, specifying etc.).

The major (either verbal or non-verbal) categories N, V, A (and only them!), are perfectly alike in bearing intrinsically (available to receiving at the *lexical* level) the *predicational* feature (or, equivalently, the *valence* feature value).

It is true nonetheless that the *predicational* feature of the non-verbal categories N (noun) and A (adjective-adverb) is ontologically (and most often, semantically) related to a corresponding *verb source*. This is the origin of the terms '*deverbative*' [31], [32] and '*deverbal*' (in many other approaches, *e.g.* [33], [34], [5], [27] etc.). We prefer the term '*predicational*' for the same notion mainly for two reasons: to emphasize that *all* major categories N, V, A are perfectly even in relationship to this property, and also because it is somehow unfair to consider *a priori* that the linguistic *source* of '*actionality*' was initially the *verb* and not its semantic *noun* correspondent. Moreover, there exist '*non-deverbative*' ('*non-deverbal*') *verbs*, which we call '*nonpredicational*' ones (or '*non-predicative*' in [26, p. 22]), such as copulative, semi-auxiliaries, modal verbs.

The indispensable asymmetry among the major categories N, V, A comes from another fact: while the predicational feature may (or may not) be an intrinsic property of any of the major categories equally, only the *verb* is able to make up such a phrasal unity as the *predicate*, when that verb is in a *tensed* form, and independently of its (non-) predicational property. A grammatical category should support the heaviness of marked degrees of temporality information within *predicate*, and the language simply (!?) picked up the verb to play this role. Why '*portrayal*' and '*portraying*' [32, p. 374, (55)], sharing in many languages verbal and/or non-verbal categories, would not be considered (and called) as *nontensed predicates*, since they behave perfectly similar to the lexical heads of a regular (*tensed*) *predicate*? These *lexical* heads non-predicationally projected into non-tensed (verbal or nominal) phrases (labeled as *non-tensed predicates*) are, at their turn, *predicationally* projected into nonfinite clauses (since '*portrayal*' and '*portraying*' bear the *predicational* feature).

Tense is a characteristic syntactic feature of the *predicate* phrase. As we had already mentioned in the previous subsection § 3.1, the *se-*

mantic head of a predicate may be distinct of its *syntactic* head, as in nominal or adjectival predicates "*is a child*", "*was green*", "*will be described*". The challenge is a lexical semantic uniform construction and theory of the *predicate* phrase, enclosing the regular and the particular expressions of this phrase, and clearing up its intrinsic relationship to the notion of *predication* that it should bear naturally.

3.3 Attributes *vs* Predicative Adjectives (Adverbs ?)

A certain particular but interesting property of the (traditionally) *predicative* and *attributive* forms of adjectives-adverbs (abbreviated A*s*) is meant to suggest the variety of the aspects involved in the examined problem.

In the construction of *predicative complements*, HPSG-94 supports the selection of complements (including subjects), as well as the assignment of their cases and semantic (thematic) roles, all taking place within the lexicon. Discussing the special situation of German, [32] used the PR(E)D feature to distinguish *attributes* from *predicative adjectives*. The only adjectives in German that can occur in predicative environments, specified as [PR(E)D +], are those presumably related to a morphological stem by zero derivation, as *klein* or *klug* in the following examples [32, p. 67, 90].

Ex.3.1.1.
*Das Buch ist klein / *kleines.*
Der Junge (masc, sing) *ist klug.*
Die Mädchen (neut, plur) *sind klug.*

Predicative adjectives in German are unspecified for agreement (and concord) features, and distinguishing between *predicative* and *attributive* forms of adjectives in German as '*lack of agreement*' in predicative adjectival environments would represent an inaccurate approach. HPSG-94 provides actually an index agreement in predicative constructions at the structure-sharing level of indices, but since predicative adjectival forms in German exhibit no inflectional morphology, they bear less information than the corresponding attributive counterparts. The consequence is that these German predicative adjectival forms are com-

patible with a wider (possibly unrestricted) class of nominals. I wonder if this apparently peculiar construction is not a trace of the adverbial behaviour of the corresponding adjectives.

Comprehensive analyses on the (French) adjective distribution, meeting also our problem may be found in [2], [3], and especially in [4], which explains the nature of prenominal and postnominal adjectival modification on the *semantic network* of the modified noun.

4 Chomsky's Minimalist Program

4.1 Types of Lexical and Grammatical Functionality as Markers

We specify from the beginning that the terms *marker* and/or *phrase marker* are used with the meaning of *function* or *relation* to be applied to text structures. This approach is close to that of HPSG-94 [32], but *different* from that of Chomsky (*e.g.* 1995, [11]), where phrase markers are meant to be represented as "*trees or labeled bracketing*" [11, p. 34].

the terms marker and/or phrase marker are used

This is a simple sample of the more general embarrassing situation existing in almost all existing syntactic theories: the lack of explanation and clarification of the relationships *among* the notions and devices introduced within the *same* framework or (sub)system. Useless to remind the natural consequences of this fact: the insufficiency of coherence of each system entails the endemic deficit in establishing relationships between *different* systems and theories and, of course, the almost impossible task to accomplish the standardization of terminology concepts used within formal and/or theoretical linguistics and, by empathy (the reverse is also true), in mathematical and computational linguistics.

Chomsky's theories, including the Minimalist Program (MinP) [11], are not an exception from these "rules", and it is not at all simple to follow up our problem of differentiating between *predicative* and *predicational* meanings. This problem may be perceived also as a remarkable case of the more general problem of pointing out the linguistic appro-

priate *markers*, or *barriers*, or *functional categories* that are necessary to be captured *from* the text for the analysis (and applied *to*, for text generation), with the aim of establishing the correct *boundaries* and *dependencies* of the text organizing structures.

Possibly most challenging from our point of view would be the performance to rediscover and reinterpret the Chomsky functional categories (call them all, *markers*) as components of a constructive and computational machinery to be used in the analysis / generation of natural language, in particular as elements of a single, unitary *hierarchy* of such markers, for the main structures of the natural language. Within this marker hierarchy, viewed as a device of such a non-transformationalism machinery, the *predicative* (at the grammatical level) and the *predicational* (at the lexical semantics level) features are just (important nonetheless) enclosed *markers*. We already suggested in introduction (§ 1 above) that *predicationality* and *θ-marking* of *heads* could be identified within this unitary hierarchy of markers (classes of markers) [17], [18]. What we are trying to do here is just to sketch the picture of this extensive task.

In the MinP organization of the *lexicon* (*e.g.* [9], [11]), the subcategorization conditions (c-*selection*) and the intrinsic semantic features and *thematic* (*θ*-)properties of the lexical heads (s-*selection*) play a central role. For the lexical heads considered in MinP, *viz.* verbs, nouns, adjectives and pre- or postpositions, c-selection states what phrasal (syntactic) categories (NP, AP, clause etc.) take a certain lexical head, while the s-conditions specify the *θ*-theory functions ('agent', 'patient', 'goal' etc.) of the c-selection arguments (subject and complements). In the *canonical structural realization* of a lexical item, s-selection seems to have an *epistemological priority* over c-selection of that item, but while much of c-selection follows from s-selection, there exists a syntactic residue expressible in terms of lexical *Case* properties. In the MinP *lexicon* organization, Chomsky remarks (based also on [24]) that a word referring to an action is not always and necessarily the verb, since "*languages commonly have nouns*, *like* destruction, *referring to actions*, *as well as verbs*, *like* be, *that don't refer to actions*" [11, p. 32]. This observation is important since it shows that major categories

(and only them) can bear *equally* the quality of being *predicational* (see § 3.3), while *Tense* is specific only to the verb and to its *predicative* feature.

Chomsky's (1995) taxonomy considers two types of categories [11]: *substantive* categories (*noun*, *verb*, *adjective*, and *particle*), while the other categories are called *functional* ones, *e.g. Tense* (T), *Inflection* (I), *Agreement* (Agr), *Complementizer* (C), *Determiner* (D) etc. We consider as being correct (but not enough) the perception that "*Functional items ...do not enter into θ-marking*" [11, p. 54]. The distinction between these (at least) *two* kinds of *functionality* is not only that between functions of one variable and functions of several variables (*i.e.* of syntactic nature), but it is actually a (semantic) separation of *predicational* nature, *viz.* between *predicational* and *existential* types of functions that are to be applied to syntactic structures. Ultimately, this separation resonates with the small theory of (narrow and broad) L-relatedness (see the next subsection § 4.2).

In more recent papers [12], [13], Chomsky is using syntactic domains called *phases*, within which structure building (*merge*) and transformations (*move*) interact. Phases are, roughly speaking, *clauses*, over which *economy conditions* are checked. In order to construct distinguished substructures independently, and the well-formedness of these structures to be determined locally, Chomsky (2000) [12] proposes the following *Impenetrability Principle* of the phase: "*In phase* Ph *with head* H*, the domain of* H *is not accessible to operations outside* Ph, *but only* H *and its hedge*". Not coming into details and supporting the completely non-transformational theories, we believe that Chomsky's *phases* show again the need of a type of textual unit (matching the *clause*) whose boundaries (and dependencies) can not be established unless the corresponding (functional) *markers* are not pointed out properly and put to work. Of essential importance among these clause (and phase) markers are the (distinct) *predicative* and *predicational* features discussed here.

4.2 θ-Marked Nominal Heads (Nominalizations) and Adjectival Heads Bearing the Predicational Feature

Interestingly, in the original proposal of the X-bar theory, Chomsky (1970) [7] talks about the *difference* between (*a*) and (*b*) in the following example

Ex.4.2.1. (*a*) *John's criticism of the book*
(*b*) *John's criticizing the book*

justifying the *projection* of a lexical category. (Also instructive is the fact that the initial categories to produce linguistic projection were *only* N, V, and A.)

We see no essential semantic difference between the 'derived nominal' *criticism* and the 'gerundive nominal' *criticizing* in what concerns their *predicational* (or *θ-marking*) properties, although their syntactic projection counterparts could be different (the so-called Apositions, *i.e. Argument positions* – not to be confound with the categorial notation 'A' for *adjective-adverb*). In Romanian we have:

Ex.4.2.2. (*a*) *Criticismul lui Ion asupra cărţii*
(*b*1) *Criticând cartea, Ion...*
or, (*b*2) *Ion criticând cartea...*

For Romanian, the gerundive forms (b) have to lose the genitive case to *Ion*, the correspondent of *John's* in Ex.4.2.1.

The problem of *predicational* feature borne by noun (*nominal*) *heads* and *nominalizations* is discussed carefully by Chomsky (*e.g.*, 1986 [9]), in the context of abstract representation of arguments (for the level of *lexicon*, see also the observation on the noun *destruction* in subsection § 4.1.), empty categories, *θ-marking* principles, Case theory, and binding theory. Chomsky [9], [11] gives the following examples of *nominalizations*:

Ex.4.2.3. (*a*) *the destruction of the city by the barbarians* [9, p. 122; 192-198], and [11, p. 32]
(*b*) *John's departure* [9, p. 139]
(*c*) *Bill's fear of John* [9, p. 142]

Predicational categories such as the predicational nouns *destruc-*

tion, *departure*, *fear*, *promise*, *story*, *reading* etc. (called also *nominalizations*), or the predicational adjectives *expected*, *proud*, *difficult*, *uncertain* etc. (called by Chomsky as "*adjectival predictions*" (!) [9, p. 121]) are analyzed for certain subtheories.

It is noteworthy the lack of the preposition (P) among the mentioned (major) predicational categories N, V, A. Chomsky does not support by examples that the 'major' category P would possibly have the same predicational status as N, V, A. Concerning the functional role of P, HPSG-94 [32] recognizes *non-predicative* and *predicative* P*s*; the former ones are "*role-restricted* (*none can take an object that will be assigned what is intuitively an agentive role*, *e.g.*)", while the latter ones assign "*no semantic role directly to the argument of the preposition*, *this role comes about indirectly*" through (and *only through* – our emphasis) the predicational verb which P*s* combines with [32, p. 342-343]. For '*predicational prepositions*' in HPSG, see § 9.4. [36, p. 181].

Coming back to Chomsky [9], his substantial remarks on nominalizations (and other predicational categories) in the context of *binding* (as well as *bounding*) theory, θ-*marking*, A-positions (Argument positions) as the syntactic, grammatical counterpart of the (semantic) θ-positions, *empty* categories etc. show again the considerable insight given by Chomsky to this topic (maybe, not enough continued in his subsequent books). For instance, a special interest yields the potential θ-marking of the *subject* in nominalizations (predicational NP*s*): "*Hence*, *it seems that nominalized form does not assign the* θ-*role unless the subject appears*, *either as a lexical element* (*as in* "their destruction of the city...") *or as a* PRO-*like element in the specifier position. Many other questions arise that bear on this conclusion*, *including considerations of lexical structure that we have not touched on here*." [9, p. 123]. The relationships *Argument–non-Argument* expressed in the special (negative) rules (188-189-190) [9, p. 143-144] on *binding theory* confirm the significance of the problem.

Chomsky (1995) [11, p. 64, 196] outlines a short *theory* of *L-features* of a lexical item L. In particular, the *functional* markers T and Agr incorporate features of the *verb*, called *V-features*. The *functions* of the

V-features of an inflectional element I is to check the morphological properties of the verb selected from the lexicon. Within the framework of the X-bar theory, for a lexical item L, Chomsky says that a position is *L-related* if it is in a *local relation* to an L-feature, *i.e.* that position is in the internal (or checking) domain of a head bearing an L-feature. The L-related positions are actually A-positions (*i.e.* Argument positions), with the exception of (other) non-θ-marked head elements (*i.e.* non-predicational elements). The checking domain can be further subdivided into two categories: *non-adjoined* (Spec) or *narrowly* L-related positions, and *adjoined* or *broadly* L-related positions.

Chomsky appreciates that a structural position narrowly L-related has the basic properties of A-positions (positions where to fill in the θ-roles), while a position that is not L-related has the basic properties of *non*-A-positions (specifiers and adjuncts). However, this view is (syntax) language-dependent, thus imprecise; it should be further developed and specified on lexical categories and types of functionality. For instance, a position being '*broadly*' L-related could mean in a language to be located closer to a (syntactic or semantic) head than *all* A-positions (the usual case of adverb in Romanian, and not only), or to be situated *subsequent to* (thus farther than) *all* A-positions, (the special case of English adverb, whose position is sometimes rather a θ-domain or clause-type boundary *marker*). This unfinished theory of L-related positions and functional L-features fits partly with the constructive and working properties of the general FX-bar scheme [18, p. 70], but a comparative approach would be unbalanced at present because of its incomplete aspects and the lack of a common conceptual platform.

Some of the functional categories (C, T, D, Agr, θ-marking, *Case*-marking) and other types of marker classes met in MinP [11], [9], [10], [38] are retrieved within the SCD (Segmentation-Cohesion-Dependency) *linguistic strategy* even since [14], [15] on certain levels of a *uniquely* structured hierarchy of *marker classes* as important segmentation and dependency establishing devices [17] for the involved syntactic structures proposed by the *functional* X-*bar* (FX-*bar*) *theory* [18].

The partial but important conclusion is that Chomsky' theories are making use of many functional (either lexical, grammatical, or discourse) elements in MinP that are also met in SCD strategy. Among these functional markers, *predicationality* (identified as semantic head θ-marking) is one of the most important. The rules of the MinP game are different to those of SCD, but many of the functional categories are similar to the SCD marker classes, constituting a stimulating support to SCD.

5 Prague School's Tectogrammatical Representations

The tradition and expertise of the Prague School in functional and structural linguistics [37], [25] developed a body of theories and mechanisms for linguistic description and analysis: FGD (*Functional Generative Description*), Tectogrammatical Representations (tree structures), Topic-Focus articulation, verbal frames etc. FGD relies on the following characteristic approaches to language: *generative* and *functional* account, *stratification*, *dependency*, and *topic-focus* articulation. A special attention was given to the *valency* and to the notion of *verbal frames*. Prague School formulates operational criteria for deducing the nature of complements of a predicational category (specifically for verbs), and classifies complements as *inner participants* (or *actants*, corresponding to *Arguments* in other theories) and *free modifications* (or *circonstants*, corresponding to *Adjuncts* in many other theories).

Prague School definition of the *verbal frame* comprises thus two types of verbal (predicational) frames, depending on their *optionality* and *obligatoriness*: *inner* participants (*arguments*) and *free* participants (*adjuncts*). The admitted five inner participants (actants) are *Actor / Bearer*, *Objective*, *Addressee*, *Origin*, and *Effect / Result*, while all others are free modifications (circonstants) of the head category, their presence within the verbal frame being either obligatory or optional, and anyway recursive for all of them.

The *valency* of *nouns* (called "*postverbal*" *nouns*, according to their

source verbs) and of *adjectives* received the deserved concern, and was embodied into the *Prague Dependency Treebank* containing verbal frame descriptions.

Prague School's approach tries to classify the actants of an action "*under a single participant heading, as far as this appears to be supported by the facts of linguistic structure*" [37, p. 134]. The proposed FGD is "*closer to Tesnière than to Fillmore, though in FGD the assignment of a certain* 'actant' *does not depend only on the number of participants of the verb*". Besides, "*not only verbs, but also other parts of speech have their frames*, i.e. *their* valency" [ibidem], nouns and adjectives being mentioned and examined explicitly. Concerning the predicational nouns, there are considered not only "*those that can be derived from the underlying verbs, but first of all, of the* tectogrammatical nouns *themselves. The same reasoning holds for adjectives and adverbs*" (!) [ibidem]. Examples containing *brother*, *beginning*, *surface*, the well-known *painting* (as some of the nouns), *useful*, *older* (as adjectives), and *to the left* (as adverb) are mentioned [37, p. 161-164].

We may conclude that in the Prague School approach, verbal frames correspond to θ-theory, actants and circonstants correspond to A- and *non*-A-positions, and *tectogrammatical* marking is very close to our notion of *predicationality* (the difference could reside mainly between part-of-speech and lexical categorial devices). Since among the considered tectogrammatical (possibly predicational) nouns one can find some that I would consider as being purely existential (non-predicational) ones such as *basket*, *bottle*, *river*, *pencil*, *book*), one can assume that the balance syntax / semantics in the Prague School tectogrammatical representations incline slightly towards semantics. An additional reason to this interpretation would be, for instance, that the valency of the *copular* '*to be*' requires two *participants* (Actor and Objective), the *existential* '*to be*' receives a single *actant* (inner participant) [37, p. 159], while in *e.g.* [26, p. 22] the copular '*to be*' is clearly appreciated as *non-predicative* (actually, *non-predicational*, – see § 3.2 and § 7 [26], but also the next section).

(Continuation in the Next Number of the Journal)

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Neculai Curteanu,

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Institute of Theoretical Informatics,
Romanian Academy, Iaşi Branch
B-dul Carol I, nr. 22A, 6600 IAŞI, ROMÂNIA
E–mail: *curteanu@iit.tuiasi.ro*