ON DEFINING PREDICATION
IN GENERATIVE GRAMMAR

PIOTR STALMASZCZYK
University of Łódź

1. Introduction

This paper discusses the syntactic aspect of linguistic predication in generative grammar. Predication is a notion of fundamental importance in philosophy, logic and linguistics. Whereas in grammatical theory predication is concerned with linguistic items, in the philosophical tradition (rooted in Aristotelian metaphysics) predication is concerned with relations between entities; it is therefore necessary to distinguish between linguistic predication and, what Lewis (1991) terms metaphysical predication:

1. Linguistic predication:
A predicate (a linguistic item) is linguistically predicated of its subject (a grammatical item).

2. Metaphysical predication:
A predicable (a metaphysical item) is metaphysically predicated of its subject (an item in the ontology).

In this paper I discuss the issue of defining the structural aspects of linguistic predication within the framework of generative grammar, from Standard Theory (e.g. Chomsky 1965), to the Government and Binding model of grammar (e.g. Chomsky 1981, 1986) and the Minimalist framework (e.g. Chomsky 1995).1

---

1 Sections 2-6 of this paper appear also in Stalmaszczuk (in press).
2. Syntactic predication and semantic predication

For the purpose of this paper, I distinguish between two types of predication, and term them semantic and syntactic (or structural) predication, respectively. Within the generative paradigm, semantic predication deals with the interpretation of arguments of verbs and thematic role assignment; syntactic predication, on the other hand, deals with the structural relations between nodes defined on phrase markers.

The distinction between semantic and syntactic predication is of crucial importance. In modern generative grammar different mechanisms are responsible for realizing the two types of predication: semantic predication is associated with interpretation and thematic role assignment, and as such falls under the scope of Theta Theory, one of the modules in the Government and Binding model of generative grammar (Chomsky 1981, 1986). The Theta principles describe the syntactic relations of heads. Whereas the lexicon determines (among others) the theta-marking properties of lexical heads (predicators), Theta Theory is concerned with proper assignment of semantic roles by heads to their complements. The appropriate general context for semantic predication is (3.1), realized in sample theta grids (3.2)\(^2\):

\[\begin{align*}
(3) & \quad 1. \text{ Predicate:} \quad \langle \text{Argument}_1, \text{Argument}_2, \ldots \rangle \\
 & \quad 2. \quad \text{a.} \quad \text{give:} \quad \langle \text{Agent, Theme, Goal} \rangle \\
 & \quad \quad \quad \text{b.} \quad \text{kiss:} \quad \langle \text{Agent, Theme} \rangle \\
 & \quad \quad \quad \text{c.} \quad \text{resemble:} \quad \langle \text{Theme, Goal} \rangle \\
 & \quad \quad \quad \text{d.} \quad \text{faint:} \quad \langle \text{Experiencer} \rangle \\
 & \quad \quad \quad \text{e.} \quad \text{see:} \quad \langle \text{Experiencer, Percept} \rangle
\end{align*}\]

Semantic predication may be polyadic (i.e. it may require more than one argument for saturation), syntactic predication, on the other hand, is always monadic – it involves a predicate term and a singular referring term functioning as its argument. In sentences (4 a-c), the referring term – NP – is complete in itself (internal saturation), whereas the predicate term – VP – is incomplete and requires closure by the argument:

\[\begin{align*}
(4) & \quad \text{a.} \quad \text{[Jenny]}_{\text{NP}} \quad \text{[fainted]}_{\text{VP}} \\
 & \quad \quad \quad \text{b.} \quad \text{[Tom]}_{\text{NP}} \quad \text{[kissed Jenny]}_{\text{VP}} \\
 & \quad \quad \quad \text{c.} \quad \text{[The boy]}_{\text{NP}} \quad \text{[broke the window with a stick]}_{\text{VP}}
\end{align*}\]

The general structure characterizing syntactic predication underlying the above sentences is (5), where the internal structure of the predicate is irrelevant to syntactic predication:

\[\begin{align*}
(5) & \quad \text{[ Subject [Predicate] ]}
\end{align*}\]

Syntactic predication is a structural relation, and will be discussed here in the context of generative grammar (from Standard Theory to X-bar Theory and Minimalism), first, however, I provide working definitions of the concepts used in this paper:

\[\begin{align*}
(6) & \quad \text{a. Subject:} \quad \text{the element which refers to something about which a statement or assertion is made in the rest of the sentence} \\
 & \quad \quad \text{b. Predicate:} \quad \text{the element which asserts something about the subject} \\
 & \quad \quad \text{c. Predication:} \quad \text{the relation between the predicate and the subject} \\
 & \quad \quad \text{d. Domain of predication:} \quad \text{sentence (clause)}
\end{align*}\]

3. Grammatical functions in Standard Theory

The generative framework has successfully incorporated several traditional grammatical notions. Standard Theory (Chomsky 1965) used functional notions (i.e. grammatical functions) like 'Subject', 'Object' and 'Predicate' in sharp contrast to categorial notions such as 'Noun Phrase' or 'Sentence'. In this approach grammatical functions were associated with the rewriting rules, in accordance with the formalizations in (7)\(^3\):

\[\begin{align*}
(7) & \quad \text{Rewriting rule for grammatical functions:} \\
 & \quad 1. \quad A \rightarrow X \\
 & \quad 2. \quad \text{a.} \quad [B, A] \\
 & \quad \quad \quad \text{b.} \quad B \text{ bears a grammatical relation to } A, \text{ where } B \text{ is a category } \\
 & \quad \quad \quad \text{X} = YBZ \,(Y,Z \text{ possibly null})
\end{align*}\]

Taking as an example one of Chomsky's favorite sentences (8), generated by the rules in (9), the relevant relations are (10)\(^4\):

\[\begin{align*}
(8) & \quad \text{Sincerity may frighten the boy} \\
(9) & \quad 1. \quad S \rightarrow \text{NP}^\text{a}_{\text{Aux}}^\text{a}_{\text{VP}} \\
 & \quad 2. \quad M \rightarrow \text{may}
\end{align*}\]

\(^2\) Lexical entries of predicated elements such as verbs and adjectives specify their argument structure in terms of the number of arguments and their semantic roles, also called thematic roles or theta-roles, this information is provided in the form of theta grids; see the discussion in Stalmaszczyk (1996).

\(^3\) Fully elaborated in Chomsky (1965: 66-71); the formal theory of grammatical relations was developed already in Chomsky (1955: 211-215).

\(^4\) The appropriate Phrase-marker is given in Chomsky (1965: 69).
2. VP → V^NP
3. NP → Det^V
4. NP → V^N
5. Det → the
6. Aux → M

(10) [NP, S] - [sincerity, sincerity may frighten the dog]
    [VP, S] - [frighten the boy, sincerity may frighten the boy]
    [NP, VP] - [the boy, frighten the boy]
    [V, VP] - [frighten, frighten the boy]

In accordance with the general rules in (7) above, the following relational definitions for grammatical functions are proposed (Chomsky 1965: 71):

(11) Grammatical Functions:
    Subject-of: [NP, S]
    Predicate-of: [VP, S]
    Direct-Object-of: [NP, VP]
    Main-Verb-of: [V, VP]

The relations 'Subject-of' and 'Predicate-of' are realized within the category Sentence (rule (9.1)), whereas the relations 'Direct-Object-of' and 'Main-Verb-of' within the category Verb Phrase (rule (9.2)).

4. Predicate in Standard Theory

As noted already in Chomsky (1955: 226), the basic grammatical relation is actor → action, whereas the secondary grammatical relation is verb → object. The base rules are further modified (relevant fragment given in (12)), crucially for this discussion, Chomsky (1965: 102) introduces the 'Predicate-Phrase', a node directly dominating the auxiliary verb, the verb phrase and relevant adverbials, and reformulates the relation 'Predicate-of', as in (13):^6

(12) 1. S → NP^Predicate-Phrase
     2. Predicate-Phrase → Aux^VP (Place) (Time)
        Copula ^ Predicate
        V (NP) (Prep - Phrase) (Manner)
     3. VP → V (NP) (like Predicate - Nominal)
     4. Predicate → Adjective

(13) Predicate-of: [Predicate-Phrase, S]

It is essential to adhere here to the distinction between the notions predicate and predicate-of the sentence. Whereas a predicate can be realized as an adjective or predicate nominal (12.4), the notion predicate-of is a relational one holding between a Predicate Phrase (obligatorily involving, but not directly dominating, a verb, see rules (12.2,3)) and a Subject. In the sentences below, the predicates are underlined, and the predicate phrases are put in brackets:^7

(14) a. Henry [is old]
    b. My dog [grew old]
    c. He [acts like an old man]

Early generative grammar concentrated primarily on phrase structure rules, transformations and appropriate levels of representation. The notion of predication remained outside the main currents of research, neither Chomsky (1955, 1957, 1965), nor other influential studies of that time (e.g. Katz and Postal 1964, Klina 1964, Rosenbaum 1967) provided an explicit definition of predication. However, from the rules in (12) it follows that the relevant context for the relation is the following:

(15) Predication:

    In the structure [S X, Y] generated by rule (i), with relations (ii) and (iii)

---

5 I.e., the subject – predicate relation, or, in our terms, the relation of predication.

6 Rosenbaum (1967: 1) uses similar basic rules, their internal organization, however, is slightly different – FDP (predicate phrase) is a sister of Aux, rather than dominating it, as in Chomsky (1965: 102):
   i. S → NP Aux FDP
   ii. FDP © VP (ADV)

   Note, however, that early generative literature is not consistent with respect to this terminology, for e.g. Klina (1964: 250-251) uses the term 'predicate' in the sense of Chomsky's Predicate Phrase, this is, however, merely a terminological issue, as demonstrated by the following rules (the Nominal functions as the subject):
   i. S → Nominal Predicate
   ii. Predicate → Aux - Main Verb (Place) (Time)

7 The Predicate Phrase in early generative grammar resembles the traditional notion of the predicate understood as the 'whole of a sentence minus the subject'; cf. Jespersen (1937: 28), and Frege's (1891) 'unsaturated function', with the subject required for saturation (i.e. closure).

8 As aptly observed by Kac (1976: 232): "advocates of transformational grammar have rarely if ever attempted to be fully explicit about how, within this theory, the facts of predication structure are to be represented". Kac himself defines predication as that portion of a sentence which contains a predicate and all and only arguments of this predicate (Kac 1976: 230). Cf. the discussion in Stalmaszczyk (in press).
For $X = \text{NP}$ and $Y = \text{PredP}$ the relevant relations are presented in the following diagram, a counterpart of the traditional, stemming from Aristotelian semantics, structure (17):

The definition in (15) explicitly captures the crucial aspect of structural predication: it holds between the subject NP and the PredP node (not to be equated with the verb). It also points to the required structural configuration.

5. X-bar Theory and grammatical functions

The Government and Binding (GB) model of grammar (e.g. Chomsky 1981, 1986, Burzio 1986) pursues the relational approach to grammatical functions. In GB, functions such as Subject and Object are not considered to be primitives of grammar, instead they are defined in structural terms (Subject-of – the relation of an NP to a sentence, Object-of – the relation of an NP to a VP, etc.). Now, however, phrase structure rules of the type referred to in section 3 (cf. (18) below), are subsumed within the category-neutral rewrite rules of the X-bar Theory (19), yielding structure (20):

(18) PS-rules:
1. $S \rightarrow \text{NP} \& \text{Aux} \& \text{VP}$
2. $\text{VP} \rightarrow \text{V} \& \text{NP}$

(19) X-bar rules:

$$\begin{align*}
\text{XP} & \rightarrow (\text{YP}) \text{X}' \\
\text{X}' & \rightarrow \text{X}^0 \text{(ZP)}
\end{align*}$$

XP (=X') above is the maximal projection of the head X, YP is its specifier, and ZP its complement. Rules of X-bar theory (as earlier PS-rules) decompose phrases into smaller units.

One of the crucial points of GB is that principles of grammar do not refer explicitly to the labels of grammatical functions, but rather apply to the structural positions defined on appropriate nodes. This move allows for redefining grammatical functions in terms of X-bar theory:

(20)

\[
\begin{array}{c}
\text{XP} \\
(\text{YP}) \\
\text{X}' \\
\text{X} \\
(\text{ZP})
\end{array}
\]

Also the relational definition (13), repeated below as (22), can be reformulated now as (23), in line with the demands of X-bar theory:

(21) Grammatical Functions:
Subject-of: [NP, XP] (Spec position of XP)
Object-of: [NP, X'] (Complement position of X)

(22) Predicate-of: [Predicate-Phrase, S]
(23) Predicate-of: [X', XP]

6. X-bar Theory and predication

It follows from the above reformulations that the relation of predication holds between [X', XP] and [Spec, XP], i.e. between X' and the (subject) NP in the Spec position, as diagrammed in (24):

(24)

\[
\begin{array}{c}
\text{XP} \\
[\text{Spec} \quad \text{X'}] \\
\text{X} \\
\text{Comp}
\end{array}
\]

* For relations between phrase structure, s-selection, 0–marking, and grammatical functions see Chomsky (1986: 160–161).
After taking into consideration the principles of X-bar theory, the definition of predication can be reformulated now as (25):

(25) **Predication:**
In the structure \([XP \text{ Spec, } X']\) generated by rule (i), with relations (ii) and (iii):
- i. \(XP \rightarrow \text{Spec } X'\)
- ii. Subject-of: \([\text{Spec, } XP]\)
- iii. Predicate-of: \([X', XP]\)

Predication is the relation of \([X', \text{XP}]\) to \([\text{Spec, } XP]\)

This definition provides an X-bar theoretic description of predication in generative grammar. A different approach – involving indexing – has been worked out by Williams (1980, and subsequent work).

7. Predication and indexing

In the framework developed in Williams (1980), predication is the relation between argument and non-argument maximal projections, and a syntactic predicate is defined as a non-argument maximal projection. In diagram (26) \(XP\) is a maximal projection of any lexical category, the value of \(\Sigma\) depends on \(X\), and the argument \(NP\) is the subject of predication.10

![Diagram 26: \(\Sigma\)]

The (indexing) rule of predication assumes the following form11:

(27) **Rule of Predication:**
1. In the structure \([\Sigma \text{ NP XP } ]\) coindex the predicate with its argument:
   - (i) \(\ldots \text{ NP } \ldots \text{ XP } \ldots \rightarrow \ldots \text{ NP}_i \ldots \text{ XP}_i \ldots\)
   - 2. NP must c-command XP or a variable bound to XP.

---

10 This approach is fully developed by Williams (1980, and subsequent work), cf. also Rothstein (1985) and Higbee-botham (1985). In certain cases \(X\) can be also realized as IP and CP, see the discussion in Hornstein and Lightfoot (1987: 23).

11 Rule (27.1) is an abbreviation for the following operations:
   - a. \(\ldots \text{ NP } \ldots \text{ XP } \ldots \rightarrow \ldots \text{ NP}_i \ldots \text{ XP}_i \ldots\)
   - b. \(\ldots \text{ NP}_i \ldots \text{ XP } \ldots \rightarrow \ldots \text{ NP}_i \ldots \text{ XP}_i \ldots\)
   - c. \(\ldots \text{ NP}_i \ldots \text{ XP}_i \ldots \rightarrow \ldots \text{ NP}_i \ldots \text{ XP}_i \ldots\)
   - d. \(\ldots \text{ NP}_i \ldots \text{ XP}_i \ldots \rightarrow \ldots \text{ NP}_i \ldots \text{ XP}_i \ldots\)

See Williams (1980) and Rothstein (1985) for reformulations and detailed analyses. For the appropriate indexing mechanism see Chomsky (1980).

Taking AP, NP, VP, and PP as paradigm cases of predicates, the environments of predication can be further divided into two kinds: external and internal.12 External predication is a relation between the external argument and the whole predicate. External predication occurs in the following configurations:

(28) i. NP\(_i\) VP\(_i\)
   - a. John\(_i\) [died]\(_i\)
   - b. John\(_i\) [kissed Mary]\(_i\)
   - ii. NP\(_i\) VP \(X_i\)
      - c. John\(_i\) [left] [nude]\(_i\)
   - iii. NP\(_i\) be \(X_i\)
      - d. John\(_i\) is [sick]\(_i\) \(X = \text{AP}\)
      - e. John\(_i\) is [a teacher]\(_i\) \(X = \text{NP}\)
      - f. John\(_i\) is [over there]\(_i\) \(X = \text{PP}\)

If, however, \(X\) (the predicate) is within the VP and the predication is of the theme of the verb (its internal argument) then the predication is internal, as below (antecedents and predicates of internal predication coindexed), with an appropriate diagram in (30):

(29) a. John gave Bill the dog, dead;
    b. John made Bill sick;
    c. John kept it \[near him]\;
    d. John considers Chomsky a genius;

(30) ![Diagram 30: \(\Sigma\)]

The sentences in (29) exhibit the co-occurrence of the two kinds of predication, for example in (29 b) the AP sick modifies the NP Bill, the theme of make, and the whole VP is predicated of the subject:

(31) John, [made [Bill, sick]],

Syntactic predicates, being monadic functions, can have no more than one argument position to be filled (saturated). There are, however, no such restrictions on the

---

12 Williams (1980) refers to these types of predication as grammatically governed and thematically governed, respectively. Williams' notions are not to be identified with Frege's grammatical predication.
subject, and in consequence one subject can have two (possibly more) different predicates, as illustrated by the following simplified structures (where double indexing represents respective predication processes):

(32) a. John, [left, ] nude
b. John, [gave Bill the [dog, dead, ]]
c. John, [kept it, near him, ]
d. John, [made [Bill, sick, ]]

In the model of grammar postulated by Williams the rules of predication derive *predicate structure* — a level of representation intermediate between S-structure and Logical Form (Williams 1980: 237):

(33) D-Structure → S-Structure → P-Structure → LF

transformations rules of predication interpretative rules

PS is a level of representation at which the subject-predicate relation is indicated by indexing (Williams 1980: 203).

A major problem with the above approach is its failure to successfully identify the node dominating the small clause constituent in sentences like (29b), repeated below:

(34) a. John, [made [Bill, sick,]]

b. 

Additionally, two different processes have to be evoked to account for both instances of predication (i.e. external and internal), also the proliferation of levels of representation does not seem adequately justified (this is especially true within the Minimalist Program). Nevertheless, the distinction between the two types of predication remains to be accounted for in a coherent manner. A unified (though simplified) structural configuration for external and internal predication has the following form:

(35) \[ \Sigma \]

\[ \text{external predication} \]

\[ \text{internal predication} \]

The Rule of Predication (27), repeated below as (36), together with (37), the reformulated version of the Theta Criterion (Williams 1994: 28), may be seen as an attempt at integrating semantic predication (theta role assignment, semantic interpretation) with syntactic predication:

(36) **Rule of Predication:**

1. In the structure \[ \Sigma \text{ NP XP } \] coindex the predicate with its argument:
   (i) ... NP ... XP ... \[ \rightarrow \] ... NP_i ... XP_i ...

2. NP must c-command XP or a variable bound to XP.

(37) **Revised Theta Criterion:**

1. Every NP must obtain some sort of interpretation in the sentence.

2. The ‘subject argument’ of every verb must be assigned to some NP.

The indexing approach to predication has been further modified and applied to thematic structure in Napoli (1989).

8. Functional categories and clause structure

The GB framework distinguishes two types of elements: *lexical* (i.e. contentful) and *functional* (non-lexical). X-bar theory is based on two categories of traditional grammar: substantive ([+N]), including nouns and adjectives, and predicate ([+V]), including verbs and adjectives. The basic rule for lexical categories (i.e. substantives and predicates) is (38):

(38) \[ X' \rightarrow \ldots X \ldots \ (X = [+N, \pm V] \text{ or } [+V, \pm N]) \]

---

13 See, however, Williams (1994) for further developments and reformulations.
14 In terms of theta-roles this criterion can be formulated as (i):
   (i) a. Every NP must receive a θ-role.
   b. Every external q-role must be assigned.
15 See the discussion in Chomsky (1981: 48-52), and (1986: 160-161).
Additionally, two non-lexical categories are introduced: INFL – the inflectional node – composed of Tense ([finite]) and Agreement features, and COMP – the complementizer node – the specifier of which is the landing site for wh-movement. The architecture of clause structure is governed by X-bar rules in (19), repeated as (39), yielding the following sentence structure:

(39) \[
\begin{align*}
XP & \rightarrow (YP) X' \\
X' & \rightarrow X^0 (ZP)
\end{align*}
\]

(40)

```
CP
  Spec
    C'
      C
        Spec
          I
            Spec
              V'
                Spec
                  V
                    XP
```

Functional elements are generated as heads of independent phrasal projections and they are situated on top (and outside) of the lexical projections. In figure (28) CP and IP are maximal functional projections of the functional heads C and I, whereas VP is the maximal projection of the lexical head V (where XP stands for the complement). More recent research, initiated by Pollock (1989), proposes further additions to the inventory of functional categories. Pollock (1989) claimed that it is necessary to reconsider IP as composed of a Tense Phrase (the inflectional morpheme Tense is generated separate from the lexical stem and heads its own projection – TP) and its complement – Agreement Phrase (with Agreement heading its own projection – AgrP). Pollock also postulated the existence of Negative Phrase (with AgrP as its possible complement). Chomsky (1993) further refined this approach and distinguished two agreement nodes (AgrS – subject agreement, and AgrO – object agree-

(41)

```
C'
  Spec
    AgrSP
      Spec
        AgrS'
          Spec
            AgrS
              TP
                Spec
                  T'
                    Spec
                      T
                        AgrOP
                          Spec
                            AgrO'
                              Spec
                                AgrO
                                  VP
```

CP, AgrSP, TP, and AgrOP constitute together the functional domain of a syntactic structure, whereas VP constitutes the lexical domain. The stems, generated in V, move (by the transformational process of adjunction) in order to be united with the inflectional morphemes in the functional heads.

The major difference between the GB and Minimalist Program (MP) approach concerns the content of lexical and functional heads. In the MP, a strong lexicalist

---

16 This diagram omits a phrase headed by the functional element negation (between AgrOP and VP), and a possible "category that includes an affirmation marker" (Chomsky 1993: 7), see also Pollock (1989: 421, n. 51) on the possibility of postulating Assertion Phrase.
approach to inflectional morphology is postulated: words emerge from the lexicon fully inflected (stems plus inflectional affixes). Licensing inflected elements consists in moving the elements from the lexical domain to positions in the functional domain, and checking whether the appropriate features of lexical categories match the features present in the functional heads (i.e. morphological features of lexical elements are checked against matching features of functional heads in the syntactic structure). Matching is checked under strict locality requirements.

In the MP there are no top-down phrase structure rules and therefore the structure in (41) results from the licensing requirements on inflected elements. The structure is built bottom-up in the process of moving elements from the lexical domain into the functional domain. Any movement that is not triggered by a requirement of morphological feature checking is excluded, further on, elements once licensed are immobile.

Recent research in post-GB comparative syntax devotes considerable attention to the issue of functional categories. Numerous studies postulate broadening the spectrum of functional categories, assuming that every morphological alternation should be reflected by an appropriate functional category. Potentially, this approach may lead to an ‘explosion’ of categories (see Iafrati 1990: 552), since, in accordance with the principles of Universal Grammar, every functional category discovered in studying the languages of the world should be present in the grammar of every single language of the world. This strong hypothesis would have very far reaching consequences for the theory of language acquisition, it is possible, however, to assume that what is universal is rather the presence of certain positions and the mechanism of movement (and word order) triggered by functional categories. Chomsky (1995: 240) observes that postulation of a functional category has to be justified by output conditions (phonetic and/or semantic interpretation), or by theory-internal arguments. Trávníček (1996) further ties this requirement with principles governing language acquisition. He claims that a child acquiring a given language L will not assume that a functional category $F_x$ is present in L unless (s)he finds evidence that it is, which means that the child is guided by the following principle (Trávníček 1996: 261):

(42) The Real Minimalist Principle:
Assume only those functional categories that you have evidence for.

A recent proposal by Solà (1996) strengthens the link between features and morphology: features are present in an inflected word only if they are observable in the morphological alternations of the paradigm the word belongs to, where a paradigm is the set of all forms that contrast for a feature value. Accordingly, the English sentence involves at least the following functional paradigms with appropriate functional projections (Solà 1996: 227):

(43) Functional projections in English:
  a. Complementizer (CP): if, that
  b. Mood (MoodP): can, may, will, etc.
  c. Tense (TP): [+ Past]
  d. Relative tense (ReltP): auxiliary have
  e. Aspect (AspP): participial morphemes -ed, -ing
  f. Telicity (Aktionsart) (TelP): delimiting particles up, down

The above paradigm results in the following structure (specifiers omitted), where the order of constituents is fixed (Solà 1996: 228):

```
(44) CP
     /-c-
    /   \
C0   MoodP
     /-c-
    /   \
Mood0 TP
     /-c-
    /   \
T0   ReltP
     /-c-
    /   \
Relt0 AspP
     /-c-
    /   \
Asp0 TelP
     /-c-
    /   \
Tel0 VP
```

Recent studies add further items to the inventory of functional categories and their projections, e.g.: Voice Phrase (Fujita 1994), various aspectual projections (Borer 1994, Arad 1996), and, crucially for this discussion, Predication Phrase (Bowers 1993).

9. The structure of VP and the functional category Predication

The MP adopts the by now standard assumption that the subject is generated in the specifier position of VP (the ‘VP-internal subject hypothesis’) and moves (overtly or covertly) to the specifier position of a higher, functional, projection:
Further on, Bowers provides extensive empirical support for his claim, based upon analyses of numerous English constructions: conjoined structures, raising to object, quantifier floating, dative arguments, and double object constructions.

The general structure of a sentence involving a transitive verb has now the following underlying form (relevant portion only):

(49) 
```
       PrP
        NP₁   Pr'
          Pr   VP
            V    NP₂
```

Bowers (1993: 596) claims that predication relation holds between the argument in [Spec, Pr] and the complement of Pr. However, employing, once again, the X-bar theoretic approach worked out earlier in this paper, it is necessary to make precise this claim: predication holds between [Spec, PrP] and [Pr', PrP], i.e. it is the relation in (50 a), rather than (50 b), where indexing stresses the difference:

(50) 
```
a. Pr
  NP₁   Pr'₁
    Pr    XP

b. Pr
  NP₁   Pr'
    Pr    XP
```

The difference is crucial as it stresses the existence of an independent predicative element (Pr), obligatorily present in the relation.¹⁸

The postulation of a new functional category has to be tested against Thráinsson's Real Minimalist Principle, repeated below:

---

¹⁷ The principle of Greed assumes that a category moves only to check its own features.

¹⁸ The consequences of this move are investigated in Eide and Afarli (1997) and Stalmaszczyk (in progress).
(51) Assume only those functional categories that you have evidence for.

What is the evidence for the functional category Predication? Is this category ever expressed overtly? The answer is positive, and I claim that the evidence comes from the existence of predicative particles in, among others, English, Welsh, and Norwegian. Below I provide only examples and a tentative sketch, details are worked out in work in progress.

As well known, English verbs like consider, choose, elect, crown, etc., may occur in constructions where the direct object is followed by either a bare noun or as an "as phrase", e.g. 19.

(52) a. Everybody considers him (as) crazy.

b. The president appointed Valerie (as) his personal adviser.

According to Quirk et al. (1985: 1200) this usage of "the preposition as designates a copular relation", however, I prefer to call as a 'predicative particle', and following Bowers (1993: 596), I assume that in small clauses it is a direct lexical realization of Pr 20. In constructions with non-alternating verbs (e.g. accept, characterize, define, regard, etc.), the particle is always obligatorily present and the (simplified) underlying form is the following:

(53) a. I regard John as crazy / an idiot

b. I regard [PP John [Pr, [AP crazy]] / [NP an idiot []]]

In small clause constructions with optional as, the head Pr is left unrealized:

(54) a. I consider John crazy

b. I consider [PP John [Pr, [AP crazy []]]]

A similar example of lexically realized Pr comes from Norwegian. In Norwegian, a nominal small clause predicate forces the presence of the particle som, a counterpart of the English particle as (Eide and Afarli 1997: 36):

(55) a. Vi fant Marit som nervervrak.

   we found Mary som nervous wreck

   'We found Mary a nervous wreck'

b. Hun levde og dide som eneboer.

   she lived and died som hermit

   'She lived and died a hermit'

Further evidence comes from Welsh. In a footnote, Bowers (1993: 597, fn. 4) tentatively assumes that also the Welsh particle yn "may well be a direct lexical realization of the category Pr". Below I provide some additional support for this claim. Welsh grammar distinguishes between predicative yn, which precedes a noun or adjective (56), and yn as a verbal adjunct in periphrastic verbal constructions (57):

(56) a. Roedd y caffee'n wag

       was cafe’yn empty

       'The cafe was empty'

b. Rwyn’ddyn rheymol

       be’yn man reasonable

       'I am a reasonable man'

(Thorne 1993: 28)

(Thorne 1993: 28)

(Thorne 1993: 251)

(Thorne 1993: 251)

(Thorne 1993: 267)

Nouns and adjectives following the predicate yn mutate, i.e. wag in (56a) is the mutated form of gwag 'empty', and ddyn in (56b) is the mutated form of dyn 'man'. Most interestingly, the predicate yn is frequently omitted but the initial consonant of the complement still selects mutation, see (58), where ddieithr is the mutated form of dieithr 'stranger' (Thorne 1993: 368):

(58) bwm yn ddieithr

   bwm ddieithr

   'I had been a stranger'

The presence of mutation, even when the particle yn is absent, may be considered as explicit manifestation of the underlying functional category Predication.

In the case of English, Norwegian and Welsh constructions involving respective predicative particles the underlying structure is (59), where NP is the subject of predication (and also possible direct object of the higher verb), p the appropriate particle (or e – empty position, unrealized head), and XP the relevant predicate (complement):

(59) ... [PP NP [Pr, [Pr, p/e] [XP ... ]]]

Predication takes place between Pr' and NP, crucially Pr' involves the predicative element (particle or abstract operator).

---

19 For a discussion of this complementation pattern, see Quirk et al. (1985: 1200), cf. also Levin (1993, section 2.14) on the 'as alternation'.

20 In this paper I refrain from analyzing the copula as another, perhaps canonical, manifestation of the functional category Predication.
10. Conclusion

Predication is a fundamental concept of linguistic theory. In this paper I have discussed its place within the generative framework. I distinguished between structural and semantic predication, where the latter is connected with Theta theory and interpretation of arguments. Structural predication, on the other hand, is a relation between nodes defined on phrase markers. I discussed this relation against the background of Standard Theory, X-bar Theory and the theory of indexing proposed by Williams.

In the recent Minimalist Program structural predication is reanalyzed as a relation triggered by the functional head Predication. This functional category is present as an abstract head in every structure involving predication, and manifests itself lexically in constructions involving predicative particles, such as, for instance as small clauses in English.

REFERENCES


Stalmaszczyk, P. In progress. Structural predication in generative grammar.


