

“Polish – Bulgarian Contrastive Grammar” — A Synthesis of Many-Volume Semantic Contrastive Grammar

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Abstract

The article outlines the history of work on the many-volume “Polish-Bulgarian Contrastive Grammar”, being an extensive attempt at a confrontation based on semantic foundations, with a gradually developed intermediary language. Theoretical foundations for describing the definiteness / indefiniteness category, modality and temporality are sketched, with the latter two categories modelled based on the theory of processes known as Petri nets. The Synthesis title — “Contrastive Polish – Bulgarian Grammar” — underlines the semantic character of the work and the fact that it develops the description from the content towards the differentiated forms in the contrasted languages. The topics discussed include universal semantic linguistic categories that until now have not been adequately presented in academic Polish and Bulgarian grammars — tense, modality, definiteness-indefiniteness and the semantic order. The order of description in the Synthesis does not follow the order of the PBCG volumes, but the generally accepted order of elements in the semantic structure of the sentence: modal characteristics, tense, quantifiers, and predicative-argumentative positions.

Keywords: contrastive grammar, semantics, interlanguage

1. “Bulgarian-Polish Contrastive Grammar” (further denoted by the acronym PBCG) is a study consisting of 12 separate monographs¹. During the work on this Project (Project 1984), a major challenge was to determine the character of the contrastive description, as well as of the research method (model description). The rather common approach which consists in projecting one examined language system (most often the foreign one) on the other (native one) was rejected, as leading to serious limitations with respect to semantic conclusions concerning a comprehensive analysis of the possibilities of expressing specific contents in each of the languages under examination (the distribution and character of formal means – morphological categories, lexical and syntactic means, etc. – may be different in each of the languages). Further research was based on the conclusion that

¹The study is published as a series, whose volumes, numbered from 1 to 8, are devoted to the individual issues: vol. 1. – phonetics and phonology, vol. 2 - 8 – semantic categories, and vol. 8 – selected word formation issues. Vol. 6 consists of 4 separate monographs focused on modal subcategories of the semantic category of modality. See the bibliography.

the compared languages cannot be treated equally without an attempt to develop an interlanguage of a semantic character. Hence the *Bulgarian-Polish Contrastive Grammar* developed over the consecutive years is — as shown by the existing publications in that field — the first and the only (apparently, not just among the elaborations of Indo-European languages) extensive attempt at a semantic confrontation using a gradually developed interlanguage.

2. The idea to develop a **dictionary of the interlanguage** *a priori* was rejected as not feasible, since any attempt to distinguish the individual units of that language would be inherently connected with examination of the concepts and details of the theoretical description model for each of the examined semantic categories. Hence the commencement of works on a volume devoted to the semantic definiteness / indefiniteness category was the first attempt to implement the concept of language confrontation using a language which would be independent of each of the analyzed codes on the semantic level (V. Koseska-Toszeza, G. Gargov 1990). In this case, the authors took inspiration from a logical theory which assigned a quantificational character to the above category. A semantically - logical research apparatus allowed them to treat both Bulgarian and Polish on the same level, and hence show the ways of expressing analogous contents in language codes differing in the system underlying such expressions. This enabled showing functional analogues for the individual semantic values in the situation when one of the languages possesses partially morphologized means for expressing the content (see the Bulgarian article), while the other has no such means (see Polish lexical analogues). The adopted description plane allowed the authors also to refer the category of definiteness / indefiniteness, as a sentential one, to the nominal as well as verbal phrases.

2.1. Making use of generally accepted definitions of logical quantifiers and of the iota-operator, the second volume of the CBPG employs three basic notions, whose meaning consists of language exponents for logical quantification (Rasiowa 1975: 211–255) and defined description (Russell 1967: 253–293), see (Koseska-Toszeza 1982). Quantification of natural language expressions can concern not only names (first order logic), but also predicates (second order logic). A quantifier transforms a logical predicate into a logical sentence, so predication cannot be identified with quantification, which is the case in some linguistic papers. By **existentiality** we mean expressions of the form $(\exists x)P(x)$, with the existential quantifier $(\exists x)$ preceding a predicate, i.e. a sentential function P , in the semantically-logical structure of the sentence, and read using phrases like “there is an x such that”, “for some x ”. By **universality** we mean expressions of the form $(\forall x)P(x)$, with the universal quantifier $(\forall x)$ preceding a predicate P in the semantically-logical structure of the sentence. Finally, by **uniqueness** we mean an expression of the form $(ix)P(x)$, assuming that a given sentential function (P) is satisfied either by exactly one element of the universe under consideration or by one and only one set of elements. As commonly accepted in logical literature, the iota-operator is treated as a uniqueness quantifier in the CBPG. *Each quantification decreases the number of (free) variables in the quantified predicate* — so it seems natural to classify substitution of a unique object for some variable in a predicate as quantification, for such an operation also decreases the number of free

variables. This is the way the iota-operator is treated in Barwise's and Cooper's works (Barwise, Cooper 1981: 159-219), whose quantification model concerns the nominal phrase only, and in the w CBPG, Vol. 2 (Koseska, Gargov 1990), where the model is applied to the verbal phrase and to the whole sentence as well. In each of such languages, like e.g. Bulgarian, Polish, Russian, Czech, English, Albanian or Rumanian, understanding of quantificational expressions is a serious challenge. Some expressions can appear in homonymous meanings, in which their quantificational value changes radically depending on the language situation where they occur. For instance, the expression "one such that P " is unique in a context which implies that predicate P is satisfied for one and only one object. Then the expression can be rewritten as a phrase with the iota-operator, i.e. as $(ix)P(x)$. See: *В неговия клас само един // (един ученик не издържа изпита W jego klasie tylko jeden. // (jeden) uczeń nie zdał matury.* [In his class, only one // (one) student has failed the graduation exam]. However, in another context, the expression "one such that P " can be understood as an existential one, i.e. as "there is some object such that P ", or as "some object satisfying P " or "there is at least one object such that P ". Then the above expression can be formalized as: $(\exists x)P(x)$. See *Една девойка ме търси по телефона / Pewna dziewczyna telefonowała do ciebie* [Some girl has called you]. It should be stressed that Bulgarian *edin* can also express universal quantification: *Един мъж и на 80 години може да се ожени.* Also the expression "each such that" is ambiguous. It can be understood as "all elements satisfying P ", which can be written as $(\forall x)P(x)$, see *Днес всяко момче кара ски / Dzisiaj każdy chłopiec jeździ na nartach* [Today every boy can ski]. However, the same expression occurring in another context and understood as "the set (of in general many elements) satisfying P as the only one such set" can be rewritten as $(iX)P(X)$, which is also a unique expression. See *Хората са двуножни същества без пера. Човекът е разумно същество. / Wszyscy ludzie są istotami dwunożnymi bez piór. Człowiek jest istotą rozumną* [All people are bipeds without feathers. The man is a rational being.]. In a natural language, the word *every (all)* can denote not only universal quantification, but also a unique object which is the set of x all such that $P(x)$, see (Koseska-Toszeva 1982). In fact, Volume 2 of the CBPG (Koseska, Gargov 1990) went to the press at the time of a fierce dispute whether the use of the definite article can be explained with help of logical quantification. Today we know that definiteness /indefiniteness in a natural language is in fact given the same meaning as "logical scope-based quantification". There are various attempts at using the logical quantification theory in the natural language semantics — see (Koseska 1977, Koseska, Gargov 1990), and the newest papers on that subject describe the use of quantifiers in a natural language e.g. based on combinatorial logic: (Descès 1999).

2.2. In Bulgarian, the most typical morphological tool which expresses universality and uniqueness in the nomen group is deemed to be the article. Its absence, i.e. a morphological 0, is significant — it is an exponent of either existentiality or pure predication. The ambiguity of the Bulgarian article, as well as the expressions *každy* (each) and *jeden* (one), are a good example of difficulties in the quantificational classification of natural language expressions encountered by a researcher studying that category. Another issue deserving a separate, detailed study are the differences in the distributions of the quantificational expressions for univer-

sality or existentiality and uniqueness in Bulgarian and Polish, such as e.g. distinguishing the contexts for Polish *pewien* (certain) compared to *jakiś, jeden* (some, one) and their comparison with the Bulgarian *някакъв, някоя, един* as well as with absence of the article. Another very interesting issue is a review of the contexts for the appearance of the Polish *ktoś, ktokolwiek* (somebody, anybody) and the Bulgarian *някоя, все някоя, кой то и да е*; the Polish *od czasu do czasu, czasami, czasem, chwilami* (from time to time, sometimes, at some moments) and the Bulgarian *понякога, от време на време*. Even a very superficial comparison of the Polish and Bulgarian lexical exponents of temporal existentiality indicates the interesting fact that there are many more of these exponents in Polish compared to their analogues in Bulgarian (Koseska, Gargov 1990). *Treating the definiteness category as a sentence category and the attempt to consider quantification also on the verbal phrase level helps us track the semantic development of the Bulgarian article*. The quoted book (Koseska-Toszeza 1982) put forward a hypothesis on the latter subject. In the author's opinion, at first the article expressed uniqueness of an element (object). However, later it also started expressing uniqueness of a set, which, as a result of identifying two completely different semantically-logical structures, namely $(\forall x)P(x)$ and $(iX)P(X)$, later lead to a homonymy, and to the article expressing universality as well. See: (1) *Човекът е от нашето село.* / *Ten człowiek jest z naszej wsi* [This man is from our village], where the article -ът expresses uniqueness of an element of a set of people. (2) *Човекът е мислещо и разумно същество.* / *Każdy człowiek i tylko on jest istotą myślącą i rozsądną* [Each man, and only the man, is a thinking and rational being], where the article -ът expresses uniqueness of the respective set. (Only the set of people satisfies the predicate: x is a thinking and rational being). (3) *Човекът е смъртен.* / *Człowiek jest śmiertelny* [The man is mortal], where the article -ът expresses universality. Not only this form of the Bulgarian article, but its other forms as well can express both uniqueness and universality. As we have similar situation in English, French, Rumanian and Albanian, the above homonymy is of a general rather than of typological (e.g Balkan) character — see a detailed discussion in (Koseska-Toszeza 1986). The above observations, based first of all on semantically-logical aspects of the definiteness category, were confirmed by the language material from the Supraśl Code (Zaimov 1982: 5-9), where the Bulgarian article does not occur in universally quantified nominal structures, but in uniquely quantified nominal expressions, denoting satisfaction of a predicate either by one element of a set or by the whole set treated as the only one such. See (Koseska-Toszeza, 1982).

2.3. The second volume of the CBPG proposes in addition distinguishing of the above differences in meaning within the same quantification using a label of either strong or weak quantificational meaning, distinguished based on secondary semantic properties of the expressions. Due to the absence of article and a smaller number of verbal forms, in Polish we observe more sentences with the semantic structure characterized by incomplete quantification than in Bulgarian (see Polish *Dziewczyzna czeka [(A, the) Girl is waiting]*. — 'some' / 'certain', 'the only one' or 'each'? with the Bulgarian *Момичето чака.*, where *момичето* 'a (the) girl' is either 'the only one', or 'each'.) This fact shows a stronger role of Polish lexems

of the type: *czasami* (sometimes), *od czasu do czasu* (from time to time), *czasem* (sometimes) in the semantic structure of the sentence compared to their Bulgarian analogues: in Polish they are an important, and often the only factor which determines the scope and the place of a quantifier in the above structure. The scope of a quantifier binding a certain variable is the whole expression starting after the quantifier indicator. If the above scope does not contain another quantifier, then the quantifier binds all the variables having the same shape as the quantifier indicator and contained in its scope.

3. The next step towards shaping an **interlanguage** was commencement of work on describing modal and temporal phenomena as sentential categories. This type of problems suggested the need to model language phenomena based on a contemporary theory of processes known as *Petri nets* (Mazurkiewicz 1986, Koseska, Mazurkiewicz 1988). The mentioned theory is well aligned with the trend in research on semantics which has introduced the notion of a *situation* into the definition of the meaning of a sentence, and started treating that meaning as a set of abstract situations (Barwise, Perry 1983; Cooper 1996). Petri nets theory (Petri 1962) is a tool independent of the existing natural languages and indifferent with respect to them. Its simplicity (the theory is based on just three primary notions: state, event and the ordering relation between them), combined with significant expressive power (as we will try to show here), predestines these notion for the role of *tertium comparationis* (interlanguage) in contrastive studies of natural languages.

3.1. We are interested in the following aspects of the nets: 1) *states of some objects which occur in a discussed fragment of the reality*; 2) *events occurring in a discussed period of time*; 3) *order and coexistence of object states; order of event occurrence*; 4) *possibility of some states and events occurring in the future, as well as in the past*. The consequence relation need not be shown in a linear order; some objects of the net may be incomparable with respect to the occurrence order since none of them precedes the other. Certain states of the net, like e.g. the speech state, can be distinguished. States and events have been adopted as fundamental units of time description. The basic property which distinguishes these notions from each other is the *temporal continuity of states* and the *temporariness of events*. In other words, states “continue”, while events can only “happen”. An abstract counterpart of this distinction is the difference between a section of the real line (state) and a point on that line (event). The adopted postulate of the finitary character of the model implies that we cannot limit the description just to events, and in consequence treat states as sets of events, following e.g. Reichenbach (1967). Referring back to the analogy with points and sections, events correspond to points, and states — to sections; the mutual relationship between events and states is like the relationship between points and sections; each point is either the beginning or an end of some section (or, in a special case, half-line); each event is either the beginning or an end of some state (e.g. the state before the occurrence of the event or the state after it). The analogy goes on: each section, similarly as each state, has at most one beginning and one end, while each point (each event) can begin or end many sections (many states) that we are interested in. In other words, an event can be the beginning or the end of more than one state, and hence it cannot be treated only as a simple “transition of one state into

another". Take, for example, a very simple sentence: *Zaczęłam się odchudzać* (I started slimming). Here we have an event representing the beginning of the state – "odchudzanie" (slimming), continuing before the speech state. We do not know what event will break the slimming state, but we know that there is still another event which took place before the speech state and linked the slimming state to the speech state. The temporal situation in the Polish composed sentence: *Zaczęłam się odchudzać i jeszcze jestem na diecie* (I have started slimming and I'm still on diet) can be represented by an English sentence with one predicate because English distinguishes between the present perfect and past simple contents. In the sentence: *I have been slimming.* – an event started the state of slimming which continues during the speech state, exactly as in the Polish composed sentence: *Zaczęłam się odchudzać i jeszcze jestem na diecie.* In Bulgarian, a perfectum form with a resultative meaning can occur in a similar case, see *Отслабнала съм.* By the above examples, an event can begin a state continuing before, during and after the speech state. For more details, see (Koseska, Mazurkiewicz 1988, Koseska, Gargov 1990). Compared to e.g. Reichenbach's linear description of time, the net model offers greater possibilities of describing that semantic language category.

4. The adopted description model allowed for giving a precise definition of an obligatory property of sentences which can belong to the individual modal subcategories (often quite complex), i.e. their inclusion of a *possibility*². Covering by the description phenomena within the semantic category of modality required a precise definition of the criteria distinguishing its subclasses, such as e.g. conditionality, hypotheticality or imperceptiveness. Work on the consecutive subcategories resulted in developing a description apparatus compliant with the adopted net model, which yielded a new type of a formalized description of those complicated phenomena. Moreover, it turned out that the descriptions of the individual subcategories characterized different properties (different shapes) of the net, whose descriptions were obtained using new elements of the interlanguage and metalanguage. For instance, the description of conditionality capturing that modal subcategory within the framework of a causal relation treats the examined phenomena as **branchings of the net** linking states and events. The description of hypotheticality uses the so-called free choice net. The specifics of the imperceptiveness category require a more detailed clarification. In sentences implementing this semantic subcategory, the sender refers to an information situation (information act) of another sender and expresses a truth reserve with respect to it. Hence those sentences should be distinguished from referred speech (reported speech) in a broad sense, when the speaker reports the message of another speaker in a neutral way (whereby the original sender of the message need not be indicated), which results in the absence of truth reserve exponents, e.g.: Pol. *Adam powiedział mi, że wczoraj w Londynie padało. // Dowiedziałam się, że w Londynie wczoraj padało;* Bulg. *Адам ми каза, че в Лондон е валило // Разбрах, че в Лондон е валило* [Adam has told me it was raining in London yesterday //I have learnt it was raining in London yesterday]. In the sentences quoted above, the current sender possesses knowledge of a situation referring to Adam (the sender

²For the details, see the description of the theoretical foundations of the model: Koseska V., Mazurkiewicz A. 1988.

knows that such situation has occurred). Embedding in the semantic structure a truth reserve with respect to a reported message (the original sender need not be indicated, but he/she is embedded in the semantic structure of imperceptive sentences) amounts to expressing it openly (through lexical means or morphological forms), see e.g.: Pol. *Adam rzekomo jest chory* [Adam is allegedly ill]. (see *Zdaniem Piotra Adam jest chory*. [In Peter's opinion, Adam is ill]) Bulg. *Адам бил болен*. (see *Според Петър Адам е болен*.) Hence an imperceptive message contains an embedded passage of the type *X (current sender) says that maybe p'* (*Adam jest chory* [Adam is ill].), which reveals a mental state of the sendee different from *know*; it is also included in the net. The net contains a local state which reflects existence of the original communication act referred to by the current sender, as well as a branching which expresses the choice between possible but mutually exclusive events leading to different states (in the quoted example: *Adam jest chory* [Adam is ill]. or *Adam nie jest chory*. [Adam is not ill]). In case of imperceptive sentences, the occurrence of a local state is connected with the character of the so-called local state carrier, and corresponds to the sender of the original message. For description of imperceptiveness in Bulgarian and Polish, see (Korytkowska, Roszko 1997); for net representation, see also (Korytkowska, Koseska 1992). The analysis of the features characterizing the individual modal subcategories and a precise definition of the shapes of the corresponding net types enabled also showing the specific position of the *possibility* and its character. So, for example, hypotheticity as the subcategory least expanded semantically is characterized by a rather simple shape of the net, containing a branching as a reflection of hypotheticity. In the nets which model sentences implementing the imperceptiveness subcategory in its basic shape, the net branching is linked to a local state (see above).

4.1. The problem involved in modelling imperceptive sentences is that the speaker can differentiate the degree of truth reservation, which reduces to embedding in the structure the mean value of *possibility*, or choosing — in view of the gradual structure of this category — another value on a scale ranging from *certainty* to *improbability* (which amounts to the current sender choosing various degrees of *possibility* that the reported sentence is true). This type of phenomenon enforced development of a net model involving a choice of a value different from the mean one on the probability scale, which amounts to extending the basic model with a sequence of states out of which the sender chooses the right one. This sequence of states ranges from the minimum value to the maximum one, and can have different numbers of exponents in the language, e.g. in Polish *najprawdopodobniej nie P'* [most probably not *P'*] / *bardzo prawdopodobne, że nie P* [very probably not *P'*] / *być może nie P'* [maybe not *P'*] / *P'* (mean value) / *bardzo prawdopodobne, że P* [very probably *P'*] / *najprawdopodobniej P* [most probably *P'*]. (Korytkowska, Roszko 1997). These facts must be taken into consideration for there are sentences which are imperceptively differentiated with respect to the probability states they express. In Bulgarian, where the imperceptiveness category is morphologized, this is quite legible, see e.g.: *Жоро имал много пари* vs. *Жоро бил имал много пари*.

5. Not all the examined categories allow for a description based on two basic notions of the state and event, and analysis using net schemata. One of them is

the characteristics of the structure of semantic predicators (as units implementing predicates in the sentential structure, i.e. verbs and verb-nominal units like, Bulg. *изпадам в захлас* – Pol. *wpadać w zachwył* [to go into raptures]). From the communication act viewpoint, the examination concerns the communicative semantic roles of the sender (Communicant 1), the receiver (Communicant 2) and the object of communication (Communicant 3) – see Gugulanova, Barakova, Szymański 1993. However, on the level of the semantic features of predicators influencing the form of the sentential structure, the analysis focuses on defining in a precise way the character of the relation through the number and character of argument positions opened. A predicator, as a lexem resulting from a certain lexicalization process, can be paraphrased via lexical units with the simplest semantics possible (analytic paraphrase) – which reveals its either simple or complex structure, e.g. a causative one, see e.g. Pol. *Strzykawka jest sterylna.* vs *Pielęgniarka wysterylizowała strzykawkę.* // Bulg. *Спринцовката е стерилна.* vs *Сестрата стерилизира спринцовката.* [The syringe is sterile // The nurse has sterilized the syringe].

5.1. From the viewpoint of the semantic classes of predicators, semantic structures of the individual classes and subclasses are characterized by distinguishing the basic relations, as simple semantically as possible, underlying the typical paraphrases, which – together with the argument positions opened – form the so-called predicate-argument positions. Thus e.g. the *Experiencer* position is a complex notion and defines the fact of opening a position next to predicates referring to the sphere of physical and psychical experiences (including mental ones), while the standard positions occupied by the nominal phrase is indicated ostensively, see e.g.: this is the position of *x* opened, by example by the predicators Pol. *czuć*, Bul. *чувствам* [feel] in the sentences: Pol. *Ala czuje, że coś się pali.* // Bulg. *Ала чувства, че нещо гори.* [Ala can smell that something is burning.] Determination of the structure type and the character of argument positions opened represents analysis on the semantic level, enabling in the next step description of surface structures in both languages, and hence indication what syntactic positions are occupied by the individual nominal phrases in the sentential structure of both the languages — see e.g. Pol. *Ani podoba się ten dom.* // Bulg. *Ана харесва тази къща* [Ania likes this house]. Such an analysis apparatus, developed in the course of work on the CBPG volume, enabled a coherent contrastive description of the implementation of predicate-argument positions, and hence a description of syntactic features of Bulgarian and Polish predicators corresponding to each other lexically. In this case, referring to the semantic phrase helped overcome the difficulties connected not only with the absence of nominal flexion w Bulgarian coupled with its existence in Polish. A more important factor is the impossibility of assigning clear functions to the morphological means represented by grammatical cases in Polish, *mutatis mutandis* – analogous difficulties related to the occurrence of preposition-free / preposition phrases in the structure of Bulgarian sentences. This linguistic plane can only be described using semantic criteria, which abstract away from the formal, surface structure (for the description model and detailed analysis of the facts on the ground in Bulgarian and Polish, see Korytkowska 1992).

6. The fact that the synthesis of the discussed many-volume elaboration is entitled: “Polish-Bulgarian Contrastive Grammar” is neither a mistake, nor a commercial trick. The title stresses that the Polish and Bulgarian languages are

treated equally thanks to the model of description going from the content to differentiated directed forms in the confronted languages.

6.1. For Polish, a novelty is, among others, an exhaustive study of the semantic category of time and aspect, of the various modal categories which up to now have not been studied in a broader way, of the semantic category of definiteness / indefiniteness, number and communicant. For Bulgarian, the situation is similar. We should stress that the Synthesis discusses universal semantic categories of the language, namely **time, modality, definiteness - indefiniteness and semantic case**, which have not been described in an exhaustive way in academic Polish and Bulgarian grammars. *The order of description is based not on the order of the consecutively elaborated CBPG volumes, but on the generally accepted order of elements in the semantic structure of a sentence.* The outermost element of that structure is its modal characteristics, followed by: time, quantifiers and their order in the structure, and predicate – argument positions. The synthesis is not a summary of the issues analyzed in the CBPG volumes, but a description of selected categories ordered according to the semantic order in the semantic structure of sentences.

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