Methods for constructing an attribute of an extensively finite predicative, semantically fuzzy set

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Abstract. The article looks into the lexical and grammatical characteristics of the system that helps describe an extensively finite predicative and semantically fuzzy set. It is shown that the qualitative expression (attribute) of the set is built upon various methods of deriving the essential property that characterizes each of the elements, contributing to the semantic clarity of the entire extensive set; therefore this property is called the predicate of the whole set. It is argued that the content of the attribute is constructed in such lexical and grammatical way that the description of the properties of one element is clearly perceived as a description of the properties of many elements of the set. There are a large number of the elements, but their quality is the same. The basic techniques for constructing a system for describing an extensively finite predicative set are considered.

1 Introduction

In modern linguistic research, there is unceasing interest in the study of the mental category of quantity and its representation by linguistic units of different levels: lexical-semantic [1, 2, 3], morphological [4; 5; 6; 7; 8; 9], and syntactic [10; 11].

The attribute, or qualitative expression, of an extensively finite predicative set is built on various methods of deriving an essential property that characterizes each of the elements, contributing to the semantic clarity of the entire extensive set, which is why this property is called the predicate of the whole set. It is obvious that this kind of essential characteristic demonstrates the specificity of the attribute of a set that has neither a primary nor final element. In other words, the number of elements is infinite, and the elements themselves, differing in spatial arrangement and adjacent temporal characteristic, are similar in their essence, which determines the semantic clarity of the set.

The lexical-grammatical structure of the description of a certain property represents it as significant for the attribute and sufficient for a complete message. Consequently, the content of the attribute is built lexically and grammatically in such a way that the description of the properties of one element is clearly perceived as a description of the properties of the multitude of other similar elements.

2 Materials and methods

Let us consider the basic techniques for constructing a system for determining an extensively finite predicative set in light of this language property.

One of the methods for constructing a system for describing a predicative set is a lexically expressed relationship of equality between the subsystems singled out from the whole system. Let us look in detail at the lexical and grammatical means of expressing this relationship. The necessary components of the system are deictic means, pronouns and pronominal adverbs that lexically explicate the relationship of equality between the content of one element to the content of each of the vast number of elements. For example, the pronoun “such”, on the one hand, and the pronouns “this” and “that”, on the other, are used in different grammatical positions in the analyzed systems. The former can be used in combination with the plural forms, whereas the latter are combined with the singular form in this system of the attribute.

The pronoun “such” usually refers to the common name of many elements to the subsequent quantitative characteristic “many”, and, substantively in the plural form, it can itself be determined by the quantitative characteristic “many”. In general, such construction in the attributive system expresses the meaning of “the reusability of the repetition of the same (“there are many such books” or “there are many such ones”).

Pronouns such as “that, this,” refer to the name of one element to the subsequent quantitative characteristic “many times,” necessarily including a component expressing the value of repeatability “times”. “Such”, “that” and “this” in their substantive use, referring to one element, are determined by the same quantitative characteristic of “many times”. In combination with the plural form, these constructions point at the attribute of multiple repeating elements of a finite set. In the system of the attribute of a predicative set, the single number of the name of an element or reference to it is determined by...
the content of the predicative property itself. It should be noted that the pronoun “such” could be found in the position of the pronoun of the considered subsystem “this (singular form) ... many times”.

However, it is more appropriate in the systems for determining individually existing elements, i.e. not collected into a set, but still similar to one another. For example, the description of the properties of one element: I have seen such a book on sale many times (like this one, but not specifically this one). Conversely, if a set of elements that are perceived and thought of collectively is described, it is more natural to use the number “many times” for an uncomplicated indication of the name of the element or the element itself: I see a dream: I am in Vienna, in a chic hotel. I enter and go to the elevator. The doorman stands at the door and watches carefully. He removes his hat, bows to me and smiles. Opens the door. I have to enter ... Nothing more, ... I’ve seen this dream three times (Blue Star by B. Zaitsev).

In addition, the use of the pronoun “such” in combination with the name in the singular or in substantive form, indicating one element, can be contextually conditioned, and therefore not requiring a special expression of the quantitative characteristic “many times” or “many”. The contextual use of the appropriate form of the pronoun “such” realizes the meaning of generalization potentially contained in it, so that the description of one element turns out to be related to many such or similar elements:

... And our artists are from the province, they have Lenin prizes and god knows what else, but nobody in the world has ever heard of them. Such one doesn’t paint, but only smudges the canvas and wants three thousand dollars for it, while living on rubles in the Soviet Union. This is a speculator on art. And instead of pulling himself together and becoming a master of the world level, he complains about poverty and explains it by the fact that he is a Ukrainian, who is not wanted to be recognized. This is an attempt to justify their lack of talent (A Home Away from Home by A. Rudenko-Desnyak).

Therefore, the description of the predicative property, the main part of the attribute system, does not contain any structural “key” elements that would indicate its individuality. The latter property is a feature of the subsystem discussed above, which lexically realizes the equality relationship between two subsystems single out from the syntactic whole. The “key” element is also a combination with the meaning of “many times” or with the word “many”, usually adjacent to a verb that is lexically incomplete without an object, the name of the described element (e.g. made flights many times, had a dream three times, etc.).

3 Results

Description of a predicate set, i.e. its attribute, is in most cases distinguished by its complexity against the background of that part of the system that is “easily recognizable” by “key” elements. In grammatical terms, the description of the predicate set is a number of independent sentences related in structure and meaning, or sometimes a single sentence, simple or complex. They are linked with each other by both a chain and a parallel connection, most often with a single subject. The description of one element should be perceived and understood as a characteristic of indefinitely many elements; therefore the presence of such words as hundred, thousand, etc., in the second subsystem, is not intended to express a concrete number, which is not important here. The value of an indefinite, very powerful set is important and relevant: Such was the Arctic Ocean I’ve seen a hundred times. Primordial extraordinary beauty of the country of drifting ice! From a height, the ocean seems welcoming and hospitable: ice floes welded to one another with ridges of toy hummocks along the seams, recent cracks covered with soft blue ice, funny dark stripes running up - like a giant decorative tile, on which a mischievous boy knocked the hammer ... (Don’t Say Farewell to the Arctic by V. Sanin.).

4 Discussion

For the content of the predicate set, it is essential that it forms the basis of the attribute and, like any attribute, should be thematically accurate and concrete. Therefore, deviations from the main topic – the description of the property that characterizes all the elements of a set as equal in this respect – are usually not observed here. For example, there is the following complex syntactic whole, where the predicate of the set (the basis of the attribute) is a description of the situation, whose content is based on a causal relationship between situational plans. This finds its grammatical expression in the form of a complex sentence, where the corresponding relation is realized between the two main parts: It was impossible to enter the dining area, bypassing the prostrate shrub distributor, and so the very thing that the prisoner especially valued - lunch, food - was irreparably damaged by this obligatory preliminary charging. Such was the situation that lasted for more than ten years. (Tales of the Kolyma by V. Shalamov). However, the attribute may be part of more general content expressed in a complex syntactic whole. At the same time, what is not directly related to the attributes does not find its expression within its linear sequence even as inserted structures, which, apparently, can be explained by the specifics of this method of describing: singling out one property that is able to describe the whole set. This is evidenced by the material being analyzed, although, probably, not a single structure of the complex syntactic whole, no matter what exact and specific content it may express, is able to “resist” containing expression, for example, of introductory remarks of a subjective nature. In syntactic wholes, where the attribute of a set is part of a general meaning, between sentences, there is no chain connection built on the basis of a single narrative subject. For many years, Ilya Romanov, head of the North Pole drifting stations, was the leader of the group of "jumpers" – people who made initial landings on the drifting ice of the Arctic. // The plane lands on the ice, the thickness and strength of this ice is unknown, and in each such landing there is a huge risk, and it takes special courage and skill to jump out of
the plane sliding on the ice, to determine, in a matter of seconds, whether the ice is strong enough, and if not – jump back onto the plane. Such jumps, Ilya Romanov and his guys made in many hundreds (For Those Who Drift by V. Sanin.).

The part of the above complex syntactic whole contains the description of a set of jumps, such that a “jump” = “a plane sits on the ice, and what kind of ice it is … … is unknown, and in every such landing there is a risk, and you need … courage and the skill to jump out of the … plane, determine, in a matter of seconds, whether the ice crust is strong enough, and if not, jump … back”.

The presence of a lexical component in the system of the syntactic whole that indicates the equality of the content described as a whole to the value of an indefinite set expressed here, can be represented in the form of a quotation, an excerpt from fiction or a poetic line. Their specific content is not a property in itself. These cases describe thoughts, feelings, and states that constitute the same implicit meaning that is comprehended every time, i.e. many times, in the process of perception of a certain specific content:

Olena’s jacket is a garden,
Buttons like dewdrops,
Her beads are hanging berries,
Ripening beads.

And such lines are numerous there (Alexander Yashin – Poet and Prose Writer by F. Abramov).

A distinctive lexical and grammatical feature of another structural variety of this method of describing the set is an explicit indefinite quantitative aspect that spreads the entire content of the attribute of the set predicate as a determining component of the system, which stands out here by analogy with the determining members of the sentence. The determinant characterizes content, which it spreads, from the point of view of an indefinite set. Therefore, it becomes evident that the unit determined in the structure of the whole is repeated indefinitely. The determinant is expressed by the quantitative-nominal combination, where the word “times” is in the dependent position: “many times”, “how many times”, “so many times”; the same is true for the word “once” with a negative particle “not”, numerals and adverbs with a quantitative meaning: repeatedly, many times, three times, etc. They usually occupy the initial position in the structure of the syntactic whole, i.e. are usually in the first sentence, the content of which begins the attribute of the predicate: And here I am, many times again, in the cargo cabin of the Ilyushin-2. All this has already happened repeatedly: spare fuel tanks and passageways obstructed with cargo, and a gas stove with two burners, on which a kettle is puffing (Don’t Say Farewell to the Arctic by V. Sanin.).

“Many times” = “This has happened repeatedly in the cargo compartment of the Ilyushin-2”.

If the predicate of the attribute of the set is direct speech, then the position of the determinant with a quantitative value depends on the position of the author’s information, in the structure of which the determinant is found:

- Some kind of comparative work was going on, right? Ukrainians here and there, - I’ve asked many times - what’s the difference? (A Home Away from Home by A. Rudenko-Desnyak).

“I’ve asked many times” = “Some kind of comparative work was going on… Ukrainians here and there, - … – what’s the difference?”

The function of the quantitative determinant component with the value of an indefinite set can be performed by the plural forms of nouns, primarily with the spatial and temporal meaning. However, in these cases the lexical meaning should not be taken into account, since the extension of the attribute in which the lexical meaning of the determinant is irrelevant to quantity, is not significant for the description of the set: He had lain in the wagon at nights, covered with his greatcoat, his arms locked behind his head, and thought of how his wife would greet him on his return home. It was as if he had a scorpion in his breast in place of a heart. As he lay thinking over a thousand details of his revenge, his teeth felt as if they were clogged with heavy grains of sand. (And Quiet Flows the Don by M. Sholokhov).

The presence of “at nights” at the beginning of the complete determinant component indicates that the same content, described in the predicate and comprising the meaning of the whole, is described many times.

Explicit quantitative aspect in the system of the syntactic whole, indicating a powerful set, provides arbitrariness in the choice of certain grammatical forms in the process of describing the predicate of the set, for example, of verb forms. In all the above complex syntactic wholes, with the exception of the last one, where there are imperfect forms, the characteristic of the verbs as a grammatical means of expression are irrelevant to the content of the attribute, hence different forms of verbs are used. The absence of a quantitative aspect in the attributive system means that the grammatical form of the description of the predicate itself should contribute to the perception of the content as described it many times.

A special role in this kind of attributes played by imperfective verbs with the meaning “non-integral unlimited action”. Among these, lexical-grammatical groups of verbs meaning “quantitative-temporal modifications of actions” are particularly common. They are verbs with the meaning of multiplicity of action, having suffixes -ная, -ная, -ны, and -а. As L. Chesnokova notes, “the one-time, multiple and multi-aspect modes of the verb action is a particular manifestation of a general category of quantity, covering both nominal and verbal categories of words and constituting a single system, which can be defined as a functional-semantic category of quantity, or a lexical-grammatical field of quantity” [12].

The specific form of verbs, often in combination with quantitative determinants, primarily with those in whose structure of expression there is no word “times”, is a very important means of expressing the multiple repetition of the content of the predicate set. However, when verbs from the “functional-semantic system of the category of quantity” are used in the description of the set, the role of the determinant is not relevant in the attribute, and its presence in the structure is not necessary: Earlier it was often, every day, then less often, patients would come to this office and sit here for a long time for an agonizing conversation on which their whole future depends. … The
doctor used to sit at his desk, and then he would rise and walk to the washstand or bookshelf when he had to give the patient a break from his gaze and think (Cancer Ward by A. Solzhenitsyn). In addition, it follows from the above example that in the description of the predicate, one of the mentioned verbs relevant to the category of quantity is enough when it occurs at the beginning of the syntactic whole, or at the absolute beginning of the series of actions in order to have all the meanings as happening many times (“would come”, “used to sit”).

At the same time, it is important to note that if the quantitative aspect (many times) is expressed by the form of the predicate of the set itself, then the verbs-actions in an independent syntactic position take the imperfect form, whereas in dependent sentences perfect verbal forms are possible: As a rule, after uttering such monologues (which happened to him pretty frequently) Shatov snatched up his cap and rushed to the door, in the full conviction that everything was now over, and that he had cut short all friendly relations with StepanTrofimovitch forever. “Hadn’t we better make it up, Shatov, after all these endearments,” he would say, benignly holding out his hand to him from his armchair.

Shatov, clumsy and bashful, disliked sentimentality. Externally he was rough, but inwardly, I believe, he had great delicacy. Although he often went too far, he was the first to suffer for it. Muttering something between his teeth in response to StepanTrofimovitch’s appeal, and shuffling with his feet like a bear, he gave a sudden and unexpected smile, put down his cap, and sat down in the same chair as before, with his eyes stubbornly fixed on the ground(The Possessed by F. Dostoevsky). The expression of the repetition is provided primarily by the specific forms of verb-actions referring to two persons – participants of the same or similar repeating events. The corresponding lexical means are introduced in some places of the narration, in the adjacent verbal position. The main verbal forms of multiple actions are primarily found in independent sentences.

In the system of a syntactic whole that describes “many times ...”, the forms “used to” and “would” play a significant role. In their usual position, preceding the first verb, these forms are capable of expressing a certain degree of habitual repetition of actions explicated by verbs, which results in the possibility to use imperfect and perfect verb forms in parallel in such kind of syntactic wholes: I used to go out to the shores of the lake; on one side was our convent and on the other the pointed mountain, they called it the Peak. I used to go up that mountain, facing the east, fall down to the ground, and weep and weep, and I don’t know how long I wept, and I don’t remember or know anything about it. I would get up, and turn back when the sun was setting, it was so big, and splendid and glorious... (The Possessed by F. Dostoevsky).

It should be noted that the form “used to” is a kind of introductory determinant with a quantitative-temporal value in the structure of the entire attributive system. Perfect forms, denoting one-time actions that “reached their limit,” can only take future tense in the description of the predicate of the set, i.e. of what has been repeated many times. The quantitative-temporal meaning of the form “used to” neutralizes the tense-aspect meaning of the perfect forms, thus ensuring the possibility of their expressing repeated actions in the past. The meaning of a single action that “reached its limit” in the past, expressed by the past tense of the perfect form, eliminates the possibility of its determination by any determinant with the meaning “many times”, including “used to” component. The impossibility of occurrence of “used to”, for example, with the parallel use of imperfect and perfect forms of the past tense in the text, indicates that the structure of expression of the attributive system is limited only to the imperfect forms; the perfect forms are not included in the system and have no relation to the content of the attribute: Many times that evening he went to the looking-glass, and stood a long while before it. At last he turned from the looking-glass to me, and with a sort of strange despair, said, “Mon cher, je suis un broken-down man.” (The Possessed by F. Dostoevsky). The last sentence contains perfect verbs in the past tense, expressing one-time, finite actions in the past (“turned”, “said”), to which the meaning “many times” does not apply. Therefore, the description “many times” is only part of the meaning of this text, expressed in the first sentence.

A variation of the content of the predicate “many times” is the content that describes the “plurality of those who”. The first case describes the same situation that occurs many times, the second one deals with the description of one person or object from a number of those that are characterized by the same set of features. The system of such description has, as a rule, a characteristic communicative “beginning”, the structure of which necessarily includes the plural form with the meaning of that indefinite set, which is described further, in the main part of the system:

With each change, the composition of the public also changes. Recently and even elegantly dressed people, “gentlemen” appear. For the last leg, only “gentlemen” and “ladies” remain. An unsavory character with a casewill retreat in the station public convenience, and a completely respectable personality will come out of it – a lawyer, a landowner, a counterrevolutionary hydra with a smoothly combed head, in a clean collar, and carries the same suitcase with a gloved hand. Heh! The faces are all familiar ...(MemoriesbyTeffi). The content of the described characteristics is usually situational; therefore, the corresponding tense-aspect meanings of verbs are active in the descriptions.

5 Conclusions

The peculiarity of the lexical and grammatical characteristics of the system for describing a predicative set is determined by the specific content of the expression device of the main system relationship "is repeated many times". In a system that describes a semantically fuzzy set, there are active lexical tools and stable syntactic constructions with substitutive-semantic semantics. They
are the main means of expressing the system relation “to be sufficient to describe a set”.

Description of a semantically fuzzy set, as in the cases mentioned above, can be done by characterizing one element. In an extensive, but integral set of elements, the relation of essential inequality between elements is realized, where the property of one of them is characteristic. On the one hand, it describes the whole set; on the other hand, it indicates the properties of many other elements that are not actualized at the time of description due to their semantic fuzziness, which makes them less explicit. Therefore, their introduction in the description is unnecessary, because they do not affect its quality.

This kind of attribute is presented in systems of syntactic wholes of the following types:

1) ... The fact that I'm already considered to be a member of the future Government of the Crimea, I saw in the changing attitude of many people towards me. **The most characteristic** was the letter of Tikhmenev, with whom I had never corresponded. (The Decline of the White Movement by N. Savich.)

2) The shades, indeed, were many. For example, if you stretch words, loosely and broadly: ‘Kheit! Kheit’ - this meant: graze calmly; nothing threatens you (The KozloturConstellation by F. Iskander).

As follows from the examples above, the degree of characteristic quality of the element being described may vary, as evidenced by the content of the initial elements of the direct description of properties. However, for describing the set as a whole, it is unimportant, because the beginning of the description in such systems tends to be formalized.

In the attributive system of semantically fuzzy sets, two parts are obligatory. The first is communicatively targeted, because it contains an uncertain quantitative aspect. An explicit tendency for the use of attribute in these systems is mandatory, as evidenced by the characteristic beginning of the second part. Both parts of the system of the attribute are interdependent, with a semantic relationship of the whole and its part being formed and realized. Without specific description, there would be no attribute. Without general description, it would be unclear what is being described.

The order of the parts in the attributive systems is fixed in this way. The formal semantic signal of “recognition” of such systems is the initial element of the second part. The contents of the “beginning” in the construction of a coherent text is associated with the actualization of speech devices, when for the recipient the form of the utterance is of no less communicative relevance than its de-notational meaning. The content of the “beginning” of the description of a property and the limited range of means of expression establish the function of representing the element as the most characteristic, but not excluding other elements coexisting in one set, that are less significant in content and therefore unimportant for the description. The initial elements in the system are formalized. One should note that they have a permanent position in the system of the attribute. They may be in the position of the absolute beginning of the second part of the system or, if they are semantically irrelevant, join the preceding lexical units, forming a more complex semantic unity.

As initial elements, phrases, fixed expressions, content and form words are used that can highlight one – the most characteristic – element from an array set of similar items. Almost all elements that begin the description of characteristic property leave the attributive system open, so it could continue to describe the properties of elements via enumeration, of course, incomplete, because there are too many elements. Therefore, in a few cases, the initial element (as a key component of the “recognition” system) introduces an enumeration. Consequently, in the system of complex syntactic wholes that describe a variety of ways to enumerate, there may be initial elements indicating that the attribute is an incomplete enumeration, a description of the properties of that part of the elements that appear to be the most significant.

The lexical and grammatical characteristics of attributive systems for de-scribing inherently different sets reveal the specificity of each of the systems of description. In all the cases considered above, there are some peculiarities. The most expressive of them are lexical features, in particular, lexical marking, that is, the strong connectedness between certain groups of words and certain attributive systems, as well as the grammatical expression of the components of the sub-system of enumeration.

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