

# *Types of Situations and Their Event Structure*

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**Abstract**—In the paper the concept of "situation" in a linguistic context is discussed, and is defined as a complex of interrelated events occurring in a particular place and time. The difference between situations and events is explained, thus events are considered as part of the situation. The event structure of the situation is proposed, which includes the composition of its participants (actants) and their role in the interaction that binds them in a given situation, as well as the circumstances. With the help of the frame/script description, a characteristic of such class of situations as a situation of confrontation is proposed.

**Keywords**—*semantics; situation; event; actant; frame*

## I. INTRODUCTION

At the present stage of scientific development, the concept of "situation" is one of the most popular; it is used in linguistics, psychology, literary studies, cognitive science, artificial intelligence, logic and other branches of science.

With regard to linguistic research, the use of the term "situation" in different contexts indicates that there is no unambiguous opinion among scholars as to what is considered a situation. This term is used by linguists in different meanings, referring to either extra-linguistic reality, or methods of its mental reflection, or semantics of a language.

## II. DEFINITION OF "SITUATION"

Russian linguists of the Moscow semantic school proposed the most common definitions of the situation as a piece of reality, real or only conceivable, in which certain objects at some point in time and in some place are connected with each other by certain relationships [1].

I.A. Melchuk considered the concept of "situation" to be formally undefined, but notes that situation is a certain lexical reflection (in a given language) of a certain "piece" of reality" [2]. According to V.G. Gak, a situation is a set of elements that are present in the mind of an objective reality speaker at the time of the utterance and that determines to a certain extent the selection of linguistic elements when forming the utterance [3]. In his interpretation, the situation is rather the context of

using the utterance, extralinguistic information affecting the construction of the utterance. From this interpretation, it follows that the situation is not a fragment of objective reality, but a phenomenon of perception, a kind of abstraction. In our opinion, this is a controversial statement.

In the works on the utterance semantics E.V. Paducheva identified the concepts of "situation" and "proposition". She defined a situation as a "referent of a language expression with a propositional meaning" [4]. In contrast to the previous definition, the situation here is recognized as an objective reality, but only as expressed in the proposition. We disagree with this definition because, firstly, not every situation is expressed only by one proposition; secondly, the situation can be expressed not by a proposition, but by a nominative unit (for example, *a holiday* or *a department meeting*); thirdly, some propositions do not correlate with any situation (for example, the proposition *Gold is a metal* does not describe any situation; it describes a fact that is not a situation).

According to V.S. Xrakovskij, a situation is a fragment of reality cut out and processed by thought and language, it is the semantic structure of a sentence [5]. This definition has its pros and cons. On the one hand, it allows one to refer the concept "situation" not only to the objective world (considering the situation as a fragment of reality), but also to thinking (considering it as a reflection of a fragment of reality in consciousness), and to language semantics (considering it as the semantic structure of the sentence) [6]. Such a broad interpretation makes it possible to use the concept of "state of affairs" as an equivalent of the concept of "situation". On the other hand, the situation can be described not only by a sentence, but also by a super-phrasal unity, and even by a whole text. In addition, even if the situation did not become the object of reflection and verbal expression at all, it still objectively remains a situation. Further, not every sentence describes a situation. For example, the proposal *Well, well!* does not describe the situation, but expresses emotion. Therefore, considering the above-mentioned this definition seems to us insolvent. *Definiens* and *definiendum* can be swapped: a fragment of reality cut out and processed by thought and language, which is the semantic structure of a

sentence, in some cases represents a situation. In this formulation, it is possible to agree with this statement, but it is not a definition of the situation.

In our study, we use the definition of the situation proposed by V.M. Savitsky considering it to be a complex of interrelated events occurring in a specific place and time [7].

### III. "SITUATION" AND "EVENT"

It should be mentioned that the relationship between the concepts of "situation" and "event" is ambiguous. Thus, a number of linguists use these terms as synonyms and do not oppose situations and events [3; 8], denoting by them actions, states, properties, and other procedural phenomena. But all this is not situations and not events, but their constituent parts (predicates). In addition to them, the events also include actants and circonstants (arguments).

There is also such an interpretation in the framework of which an event represents any state change (in a broad sense), and the situation is understood more broadly - as everything that can be described by a sentence [9]. The same distinction between situation and event is noted by Ch. Bally: "But what we call a situation has a wider meaning: there are not only elements perceived by the senses in the process of speech, but also all the circumstances known to the interlocutors that can serve as a motive for their conversation" [10].

As part of our study, events are considered as part of the situation. In this case, the situation "stands above events", unites a multitude of participants in communication, connects speech and nonverbal, a human, means and products of production. Events do not exist outside of situations.

The connection and structural proximity of situations and events allows to use some "event" characteristics to the concept of the situation. Both in semantic syntax and in lexical semantics, participants of an event, boundaries of an event, internal relations between components of a single event, relations between events are taken into account when analyzing events.

At the same time, temporal limitation is important for the event. So, according to A.T. Ishmuratov, the situation is "formed" from homogeneous or heterogeneous events that are necessarily similar only in one thing - they all occur at the same time [11]. In the event it is important that it started at a certain point and ended; we can talk not only about the fact that an event regularly takes place, but also about the fact that it took place. If we are talking about a situation, then we are always located "inside" the situation, in its present tense. The situation acts as a complex of interrelated events occurring sequentially or in parallel in a certain period of time.

Thus situations can be divided into two broad categories - static and dynamic. The static ones include permanent (relations and properties) and non-permanent (states) situations. A static situation does not lead to a change in the state or properties of the objects participating in it throughout the time interval in which it occurs. This situation is not being changed in time, and for its continuation, no special efforts are required: the situation lasts until something outside happens

that will change it. Dynamic situations are divided into events, which, in turn, include results and achievements, and processes that can be homogeneous and inhomogeneous. Such situations are characterized by the presence of qualitatively different temporal phases, while the static situation is homogeneous [4].

### IV. SEMANTIC COMPONENTS OF SITUATION

Many situations can be described as a number of physical and cognitive events. For example, an act of subject-practical activity includes not only a physical action or a system of actions, but also the "pre-action" preceding it — that is a practical reasoning, including motive, goal-setting, developing a plan, etc., as well as "follow-up" — that is the analysis and assessment and performance. The reasoning can be carried out in the course of action.

Events as part of a situation can be organized depending on the following types of communication: causal (causal), symptomatic (event and its manifestation), communication by contiguity in space and time, genetic (communication by origin), functional (communication by common purpose), connections of a part and the whole, hierarchical communication, etc. For example:

- causal connection: *to die* (cause event) - *to kick the bucket* (event-effect)

- symptomatic connection: *to worry* (inner world event) - *to get your panties in a bunch* (external manifestation)

- connection by adjacency: *to drink* (event) - *to wet one's whistle* (adjacent event), etc.

J. Barwise and M. Perry characterize situations as something basic and omnipresent and note that "we are always in certain situations ... Cognitive activity identifies in situations categories of objects that have attributes and are in ... their locations - coherent areas of space -time. Human languages reflect and strengthen this cognitive activity, giving us the opportunity to transmit information about situations - those in which we are ourselves and those that are distant from us in space and time" [12]. According to their concept, the situation is characterized by a locus and a type that show which objects in which relationship are located in a given locus.

The cited authors identify the following components in a situation: a set of objects, a set of actions, a set of properties and states, a set of relations between objects, a set of locuses (chronotopic characteristics) of objects. The situation can be represented as a total series of events, each of which is characterized by its own locus; an actual series of events can be distinguished, significant for the observer in this or that aspect.

The composition of its participants (actants) and their role in the interaction that binds them in a given situation are among the main substantively relevant characteristics of situations (see, for example, the works of N.D. Arutyunova [6], Y.D. Apresyan [1], V.G. Gak [3], V.S. Xrakovskij, [5], and others.)

The term participant of the situation means “objects (material and ideal), directly interacting in a situation or acting as a carrier of a sign or state” [13]. The terms denoting obligatory participants of a situation are called the arguments of this predicate, or its actants. The only participant in the situation always represents the carrier of quality, property or condition. The functions of the participants of the situation in the case when there are two or more of them, “are determined by the type of relationship that is fixed between them speaking in the utterance” [13]. For example, in the sentences *We are in the room* and *We are cleaning the room* there are two participants of the situation, but the relationship between them is different. In the first sentence, “We” refers to a group of people somewhere, the second argument - the circonstant “in the room” - the space in which the subject is localized. In the second sentence, “We” denotes a group of activists doing useful work, and “room” is an object of influence. The overall picture of the situation is made up of a specific set of components of the meaning - the semantic components, each semantic component corresponds to some relevant feature for a given situation.

In the semantic presentation of more complex situations, the participant can perform more than one role or change their role in the course of the deployment of events. Therefore, in our model, the concepts of actant (event participant) and its event role (function) differ. For example, in the situation described by the English idiom *to hoe each other's row*, each of its participants acts in two roles: the provider and the receiver of the service. In the situation described by the figurative basis of the English idiom *to rob Peter to pay Paul*, it is assumed that the same participant initially remains in the role of the debtor (in relation to Paul), then in the role of a robber (in relation to Peter) and, finally, in the role of a payer (in relation to Paul); Peter changes the role of the owner to the role of the victim, and Paul - the role of the lender to the role of the owner. The distinction between the concepts of the actant and the role is necessary in order to identify the participants and assign a range of roles to each of them correctly.

In the works on situational semantics (R. Abelson, R. Schenk [14], C. Fillmore [15], S. Marnette [16], etc.), besides actants, the situation structure includes a locus (chronotop), which is divided into circonstants - spatial (position of the actant / place of deployment of the situation) and temporal (moment / period of the occurrence of an event or a series of events). According to A.T. Ishmuratov [11], to express situations, it is necessary to have a description of “time intervals” - abstract durations that are the “absolute background” of situations, an indication of when they occur.

In addition to the differences in the number and method of filling argument places, predicates differ in the type of connection of the situations they designate with the time axis. Since the situation always takes place at some point (points) of the space-time continuum, time is an obligatory element of the propositional content of the situation. It does not actually belong to the predicate-argument structure, but is considered as a semantic operator relating to this structure as a whole.

## V. FRAME PRESENTATION

A convenient tool for carrying out the task of structuring a situation is a frame. The variety of frames used by us in the process of analyzing situations is called scripts. In the case when it is necessary to structure a dynamic situation, it is customary to talk about a frame script (script). This is a dynamic structure in which elements are scanned, “run” by the mind’s eye in a certain sequence (Abelson, Schenk [14], Dake [17], Mushayabasa [18]). Scripts are characterized by the fact that they describe not objects and not static states of affairs, but events unfolding in time, which add up to the situation by forming a sequence.

On the basis of script description methodology, the structure of various classes of situations can be characterized [19]. For example, we give a description of the situations of confrontation.

Confrontation can be defined as a group activity in which the objectives of the actants are disagreed, i.e. the success (victory) of one actant means the failure (defeat) of another. As part of the agreement, the objectives of the partners are agreed and mutually dependent on:

((x INTENDS TO A) and (z INTENDS TO B) and (IF A THEN B) and (IF B THEN A)).

Within the framework of the conflict, they exclude each other:

(x INTENDS TO A) AND (z INTENDS TO B) AND (IF A THEN NOT B) AND (IF B THEN NOT A).

There are two main ways to resolve the conflict: the struggle and the compromise. Below is a generalized description of these ways.

If participants join in STRUGGLE, they are called OPPONENTS. Each of them is in a PROBLEM SITUATION, in which the actions of the enemy are an obstacle to achieving the PURPOSE. THE TASK (intermediate goal) is to deprive the adversary of POTENCIES for action. One of the METHODS of solving this task can be the LIQUIDATION of the opponent himself (this is “a struggle not for life, but for death”). The struggle can be fought with different METHODS, using different TOOLS depending on the nature of the conflict.

The struggle may be regulated by the RULES (for example, in a duel). In this case, the conflict scenario includes elements of an agreement or norms. At the same time, RIGHTS AND OBLIGATIONS may be violated, which is also included in the system of methods (strategy, tactics) of the struggle.

An adversary who succeeds in achieving a goal is called the WINNER, and the other adversary is, accordingly, the DEFEATED.

Within the CONFLICT frame, different phases of the scenario are possible: attack, damage to the enemy, resistance, persistent struggle, retreat, termination of the conflict.

In these terms, we can describe the typical endings of the struggle: victory, defeat, draw, attack, defense, retreat,

counterattack, balance of power, honesty / dishonesty in the fight, captivity, trophies, etc. All of them have a specific place in the "Conflict" script. In a particular description, the reference to the predicates relating to the "Conflict" script means referring to this script, "embedding" this script into this particular description. For example:

Frame "Armed Attack"

1. THE INITIAL STATE: x HAS i; IF (x USES i to z) THEN (z GETS PHYSICAL DAMAGE) € t0

2. INTENTION x: x INTENDED (x CAUSED (z GETS PHYSICAL DAMAGE)) € t1

3. POTENTIAL x: x CAN (x USES i to z) € t1

4. ACTION x: (x USES i to z) € t2

5. CONSEQUENCE: (z GETS PHYSICAL DAMAGE) € t3

TABLE I - Terminal interpretation of variables:

Explicate Slots	x doer	USES	i instrument	z object
1	enemy	shoots	weapons	population
2	bully	throws	a stone	boy
3	someone	charges	arguments	someone
4	Cassius Calhaun from T.Mayne Reece The Headless Horseman	shoots	a bullet	at Henry Poindexter
5	Hamlet from W.Shakespeare Hamlet)	thrusts	his sword	into Polonius
6	David (from 1 Samuel 17)	hurls	a stone	at Goliath

Confrontation can be physical (fight, battle, duel, etc.) or verbal (dispute, discussion, debate). The semantic integral of this "group sign" is the "Conflict" hyper frame, and the semantic differential is the PHYS and INF markers. In other words, the difference between the compared groups of scripts is found at the level of methods of conflict management: in the first case, these are methods of physical influence, and in the second - methods of informational (cognitive, verbal) influence.

In the case of a compromise, the parties to the conflict do not enter into the struggle or stop the struggle that has already begun and enter into an agreement providing for the partial realization of the intentions of both parties, which is not mutually exclusive. A compromise example is a value sharing. The "Compromise" script is the basis of the figurativeness of the phraseological units *to meet each other half-way*, the "false compromise" - *lion's share*.

But the opposite is also possible - the agreement grows into confrontation. This happens when the participants understand their rights and obligations differently (as an example the confrontation between the Goldfish and the insatiable Old Woman in the Tale of the Fisherman and the Fish by A.S. Pushkin), or when someone of the participants violates their obligations.

Let us turn further to the structure of the competition. Competition is a conditional conflict, an imitation of a conflict. So, the sports fight of fencers imitates the duel, and the chess game - the battle. This metaphor has become so familiar that newspaper stamps like *chess battle*, *tennis duel* are perceived almost literally.

The boundaries between competition and conflict are blurred: it all depends on which component — agreement or conflict — dominates. Thus, economic competition may include aggressive methods (blackmail, industrial espionage, sabotage); the fight of gladiators, the game of Russian roulette is not so much a match as a duel.

The same figurative meanings can describe the phases of a competition or conflict (to carry the garland, to take the bun, to come off second-best, to meet one's Waterloo).

## VI. CONCLUSIONS

In the paper the frame-scenario mode of semantic presentation of situations is characterized.

Nowadays the concept of "situation" is one of the most popular in science thought after the comparison of the situation definitions the conclusion is drawn about the vagueness of this concept and about the impossibility of giving it a strict definition.

The two types of situations are differentiated - static and dynamic. It is shown that the static situation does not lead to a change in the state or properties of the objects involved in it during the entire time interval in which it occurs. This situation does not change in time, and for its continuation no special efforts are required: the situation lasts until something outside happens that will change it. Dynamic situations can be divided into events that consist of results and achievements, and processes that can be homogeneous or heterogeneous. Such situations are characterized by the presence of qualitatively different time stages, while the static situation is uniform.

The situation is usually a complex of physical and cognitive events. For example, acts of subject-practical activity include not only physical action or a system of actions. They also consist of a previous pre-action and aftereffect - analysis and assessment of the progress and results of activities. Practical reasoning can be carried out in the course of action.

Confrontation as example of situation can be viewed as a group activity in which the objectives of the actants are not consistent - the success of one actant means the failure of another. The two main ways to resolve a conflict situation are struggle and compromise. Their generalized description shows that in those situations, the participants of which come to grips, they are called opponents. In addition, each of them gets into a problem situation in which the actions of the enemy are an obstacle to the achievement of the goal. An extreme method of solving this problem can be the destruction of the enemy. In general, the struggle can be carried out by different methods; different tools may be used depending on the nature and extent of the conflict.

In the framework of the “Confrontation” scenario, the following stages are distinguished: attack, damage to the enemy, resistance, persistent struggle, retreat, end of the conflict. In these terms, one can describe the phases of the struggle: victory, defeat, draw, attack, defense, retreat, counterattack, balance of power, capture, honesty / dishonesty in the fight, trophies, etc. All of them occupy a certain position in the “Confrontation” scenario. In the description, when mentioning predicates relating to the “Confrontation” frame, reference is made to the specified scenario, a certain “embedding” of this scenario into this particular description.

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