



# On Some Features of Expressing Simultaneity Relations in the English Economic Discourse

**Olga A. Kochergina<sup>a</sup>, Irina S. Oblova<sup>b</sup>**, <sup>a,b</sup>Assoc. Prof. Saint Petersburg Mining University, Department of Foreign Languages, Saint-Petersburg, Russia, Email: [Kochergina\\_OA@pers.spmi.ru](mailto:Kochergina_OA@pers.spmi.ru), [Oblova\\_IS@pers.spmi.ru](mailto:Oblova_IS@pers.spmi.ru)

This article deals with the main structural and semantic features of simultaneity relations implemented in the economic discourse. The simultaneity relationship under study can be seen in the very essence of economic science and economic concepts, therefore it is bound to manifest itself and to be expressed in the language and linguistic categories forming the economic content. Thus, a large group of abstract names having predominantly deverbal nature can be distinguished. Such substantives are able to designate a situation synchronous with that represented by the main part of the sentence in a reduced form, which allows considering sentences with abstract names to be a specific form of expressing the taxis relation of simultaneity, characterised by its own specific features. Linguistic structures of the economic discourse in which the taxis meaning of simultaneity is implemented include sentences with homogeneous predicates, with participial, gerundial and other phrases, compound sentences, as well as simple sentences and sequences of independent sentences. Specific features of the material under study also include convergence of semantic meanings in a complex sentence: conditional and temporal meanings, concession and time, and reason and time. Taxis cannot be considered irrespective of the complicating semantic elements mentioned above.

**Key words:** *Simultaneity, Temporal Relations, Economic Discourse, Simple Sentence, Complex Sentence, Abstract Nouns, Conjunctions, Time Clauses.*

## 1. Introduction

Time is one of the most complicated categories not only in language, but also in philosophy, physics and other areas of human knowledge. Along with space, time is among the main existential categories describing conditions of our existence and creating a conceptual picture of the world. Everything that is associated with explication of temporal relations in cognitive science and, above all, the way they are presented in the human mind through different linguistic forms and in different languages, comes under the scrutiny of modern linguistics and allied areas of knowledge.

According to linguists, temporal relations are among the most difficult aspects of English semantics, although there are a lot of studies devoted to the issue, both in domestic and foreign linguistics (cf., R. Jakobson, 1990, J. Thompson, 1992, M.Yu. Ryabova, 1993, A.V. Bondarko, 2001, T. Givon, 2001, R. Longacre, 2007, A.I. Varshavskaya, 2008, S.A. Sveshnicova, 2010, B.Ya Pukshansky, 2016, N.A. Muravyov, 2017, E.A. Koltsova, 2018, C. Grisot, 2018, Kobie van Krieken, 2019). This article examines ways of expressing simultaneity relations in economic discourse. In our opinion, within the general mass of the studied languages of science, insufficient attention is paid to the sublanguage of economics, which is quite undue.

The fact is that certain simultaneity can be seen in the very origin of the word “political economy”, which appeared in the first scientific publication on economics, written in 1615 by Antoine Montchrestien in France. The term "political economy" is derived from the Greek words: *politicos* – state, public (from the word *polis* – city) and *oikonomia* – household management (from the words *oikos* – household and *nomos* – law) (Political Economy Dictionary, 2010). A city can be called a city only when a large number of people live in a certain area at the same time. Also, economy (in the sense in which it is used in economics) is a homogeneous aggregate of households that form the economy of a city, a country, or a nation. And a law is a law only when everyone, without exception, observes it simultaneously.

Therefore, discussion of the taxis meaning of simultaneity in relation to economic texts suggests itself, even based on the terminology of economic science only. The main features of economic discourse include the presence of abstract names in it, which not only characterise economic discourse, but also determine features of expressing temporal relations. Here is, for example, the definition of stagflation: “**stagflation** or recession-inflation is a situation in which the inflation rate is high, the economic growth rate slows down, and unemployment remains steadily high” (Simple English Wikipedia). In other words, it is a situation where several phenomena occur simultaneously: there is a high inflation rate, a slowdown in economic growth and a high level of inflation. And the following interpretation of the term “political economy” is provided in R. Gilpin's work: “The parallel existence and mutual interaction of “state” and “market” in the modern world create “political economy”



(Gilpin, 1987: 8). From the linguistic point of view, it can be noted that the existence of the state and market at the same time and their interaction is emphasised by the lexical element – the adjective “**parallel**”. Thus, since the explored relations of simultaneity are already visible in the very essence of the economic science, they are bound to manifest themselves and to be expressed in the language and linguistic categories.

## **2. Materials and Methods**

The research material consists of approximately 5000 examples, of which about 4000 have been selected using the method of continuous sampling from educational texts on economics, intended for those who have just begun studying economics, and monographs targeted at the audience of economic scientists. About 1000 examples have been selected from non-fiction works by classic and contemporary English and American writers. They are used in section 3.1 to illustrate some general linguo-philosophical aspects of the concept of simultaneity. The studied means of expressing the taxis meaning of simultaneity are considered in the context of a sentence and a text.

The object of the research is the means of expressing the taxis meaning of simultaneity. The work examines units of different levels of the language system: lexical, lexico-grammatical, morphological and syntactic.

The work uses the principle of description "from content to the form of expression" with the use of some elements of conceptual (cognitive) (L.Talmy, 2000, 2002, G. Lakoff, 2010), contextual (I.V. Arnold, 2018) and discourse (V. Karasik, 2015) analysis. The method of comparative (contrastive) study of the English and Russian languages was used as an additional technique.

The scientific novelty of this study lies both in the formulation of the problem (this is the first time taxis relations, in particular simultaneity, in economic discourse have been studied), and in the methods of its exploration. Within the conceptual approach, the correlation of the concept of simultaneity with other concepts, its role and place in the general conceptual picture of the world is explored.

In addition, simultaneity is viewed as an independent grammatical meaning that has some grammatical forms expressing certain conceptual content. An important aspect of this work is that the meaning of simultaneity is analysed from the standpoint of significance, determined a) through its relation to other meanings; b) with account for the functional-communicative factor.

### 3. Results and Discussion

#### 3.1. Linguo-Philosophical Aspect of the Concept of Simultaneity

The set of issues, which is rather complex and requires deep and comprehensive study, includes the issue of interpreting the term "simultaneity". Generally speaking, in philosophy, simultaneity is defined as an absence of temporal relations between events. It should be noted that this concept was not given due attention for a long time, because many thinkers considered its content to be definite and clear.

According to Yu.B. Molchanov, a well-defined interpretation of the term appears in the substantial concept of time developed by Newton. According to the concept, simultaneous events are those that take place at the same instant of time (Molchanov, 1977: 57). This view is largely caused by the conventional natural science picture of the world, the idea of single absolute time for the entire universe.

From the perspective of the relational concept of time, simultaneity has fundamental impossibility for events to exert any material impact on each other. There cannot be any "earlier/later" relationship between simultaneous events, nor can they correlate with each other as past and future events. Events can be simultaneous both in the present time and in the past or future.

The concept of a single absolute simultaneity is contrasted with relative or subjective simultaneity – the term that appeared in presentation of the special theory of relativity within the relational concept of time. The theory of relativity abandoned the concept of absolute simultaneity in view of finiteness of the speed of light. Assimilation of the instants of two events makes sense when these events are considered within a particular reference system. Events that are simultaneous in one reference system turn out to be non-simultaneous in another reference system (Philosophical Encyclopedic Dictionary, 2010).

Relativity of time and space intervals remains dominant in physical and popular science literature, both in our country and abroad. According to Yu.B. Molchanov, the inability to find a physical standard of absolute time has eventually led to denial of the objective nature of time. On the one hand, it is due to an objective factor of absence of strictly uniform movement and strictly repeating periodic processes in nature. On the other hand, there is a problem of determining simultaneity of diverse events, that is, those that occurred in different points of the world space (Molchanov, 1990: 77).

Unlike Newton, who believed that events occurring at different points in space can be reduced to a single time scale – that of absolute time (cit. ex Ismailov, 1985: 28), G. Reichenbach suggests that spatially distant events are localised at different points in space and, due to the finite speed of material interactions, cannot be related to each other. The

simultaneity characteristic of these events is called physical, or topological, simultaneity (Reichenbach, 1985). The concept of physical simultaneity defines approximate coincidence of events in time and basically presents relatively simultaneous events, or relative simultaneity, that is actually observed in the objective reality and established empirically.

G. Reichenbach also distinguishes absolute simultaneity, which he calls “epistemological simultaneity”. At the same time, it is said that “epistemological simultaneity, strictly speaking, is not simultaneity of time points, but an identity. A confluence of events at the same place and time is called a coincidence” (Reichenbach, 1985: 144). Such full coincidence does not occur in practice of course, as otherwise we would not be able to distinguish between these events. Therefore, epistemological or absolute simultaneity can be established only by definition, in contrast to approximate coincidence of spatially distant events whose simultaneity is established empirically.

A point of view similar to that of G. Reichenbach is expressed by A. Grünbaum. However, A. Grünbaum uses slightly different terminology. Thus, G. Reichenbach's concept of epistemological simultaneity corresponds to A. Grünbaum's concept of metrically simultaneous events. Events that are localised in different reference systems and called topologically simultaneous by A. Grünbaum (Grünbaum, 2003) are characterised in terms of physical simultaneity by G. Reichenbach.

Thus, in philosophy, simultaneity is conceptually established between any two events that are indefinite in relation to their order in time and which cannot have any causal relationship, as the presence of such relations unambiguously establishes the order of the events in time. Physical simultaneity signifies only relatively simultaneous events of the objective world, while absolute simultaneity can be presumed only theoretically and cannot be captured in practice.

The difference in the types of simultaneous events in the real world described above is bound to find its expression in language as it is language that reflects the world perceived by a human being. Language is a kind of "mirror" demonstrating our knowledge, experiences and impressions of the world.

In English, one can find designation of simultaneous relations between events that reflect at least two main types of physical, relative simultaneity. In the classification by Khrakovskiy (2009), complete and incomplete types of simultaneity are distinguished.

1) Complete coincidence of events in time (if the beginning and the end of both events coincide chronologically):

(1) I drank the whisky and soda and read while Catherine unpacked (Hemingway, 1969: 267).

2) Incomplete or partial coincidence of events in time (if two events overlap chronologically only for a certain period of time):

(2) The impact of that change in aggregate demand on the economy depends on which range of the aggregate supply curve the economy is on when the fiscal policy takes effect (Clark, 1987: 322).

These types of relations can be designated respectively as relations of absolute synchrony and relative synchrony. Absolute synchrony corresponds to designation of strict physical simultaneity between events. This relationship can be established in the following syntactic and contextual conditions if:

– Both syntactically conjugated predicates denote situations lasting in time (so-called linear actions), e.g. .:

(3) Not so the neighbours, who as the work of demolition proceeded, became increasingly enraged (Waugh, 1980: 122).

– Both syntactically conjugated predicates denote strictly coinciding single-point situations, e.g. .:

(4) In the elevator we were crowded and as my legs bent the pain was very bad (Hemingway 1969: 59).

It is interesting to note that the classification by T. Givon (2001) distinguishes this kind of simultaneity as a separate type of temporal relations – Point Coincidence along with Simultaneity. There is a necessary condition for implementation of the absolute synchrony relation: aspectual homogeneity of predicates of conjugated actions (either only linear ones – when the time of the action is a segment which can be marked off on the time axis and which, therefore, represents a certain period of time; or only single-point ones – the time of their performance refers to a point on the time axis).

Relative synchrony designates relations of non-strict physical simultaneity between events and, according to studies by M.Yu. Ryabova (Ryabova, 1993), can be observed under the following conditions of the syntactic context (sentences with conjunctions **when**, **as** and **while** have been used as illustrative material, as these are sentences with time clauses that contain the most diverse shades of temporal meanings). If:

– Both conjugated predicates denote continuing situations, whose time frames coincide only partially (the situation denoted by the main clause (MC) predicate has begun before that of the subordinate clause (SC) and vice versa):

(5) The sun shone while he drank (Hemingway, 1971: 175).

(6) Later when he started to operate Uncle George and three Indian men held the woman still (Hemingway 1971: 31).

– Both conjugated predicates convey single-point situations, while one of them denotes a situation that has begun earlier than that denoted by the second predicate:

(7) As the hand appeared at his door Paul whispered: “What’s happened?” (Waugh, 1980: 173).

– The MC predicate presents a single-point situation, while the SC predicate denotes a continuing situation in the midst of which the single-point situation takes place, and vice versa, the MC predicate denotes a linear situation, whose time frame comprises the single-point situation of the SC predicate, e.g:

(8) He died while I was stopping up the two holes (Hemingway, 1969: 192).

(9) He crossed the yard and was swinging himself through the rail fence, when he heard the nurse’s sobbing scream, muffled by the walls of the house (Grau, 1964: 22).

As can be seen, different degrees of duration of conjugated situations in the statement is a necessary condition for relative synchrony.

In the classification of temporal relations by B. Kortmann (1998) one can also trace the following types of simultaneity: Simultaneity Overlap, Simultaneity Duration and Simultaneity C-extensiveness. Thus, in addition to placing situations on the time axis, the emphasis is also made on aspectual varieties of relations.

When describing the above conditions in which relative synchrony can be observed, in each situation, the stages (beginning, continuation) were mentioned that are included in the structure of an action (state or event) and reflect its dynamics, or in other words, phases of the action (state or event). The phases are always associated with some kind of change over time. Those are stages of the same phenomenon, alternating, replacing each other (often periodically) in the course of its development or existence.

O.V. Kazunina, who considered interaction of the phasal nature and other grammatical meanings (type, telicity/ atelicity, multiplicity, perfection, modality, etcetera) in detail, also speaks about the interaction of the category of phase and taxis, which is expressed in modification of their meanings. Thus, the relationship of simultaneity/ diversity connects not the conjugated actions themselves, but their separate phases, including different phases of the same action. In this case, phases of the same action or different actions are considered from

the point of view of their temporal correlation, partial or complete coincidence or diversity in time (Kazunina, 2002: 135-137). Thus, the interaction of phasing and taxis manifests itself in the conjugation of various phases of the same or different actions in time and in the nature of the relationship between them:

(10) Paul made no answer, and Mr Prendergast went on breathing and rubbing (Waugh, 1980: 53).

In this example, different actions connected by simultaneity relations are combined in a single general phase of continuation of the action started.

If simultaneity is considered as a semantic category, then, in addition to the above-mentioned chronological relations, the category can also conceptually include relations of the so-called indefinite simultaneity (or "pseudo-simultaneity"), for which any two events that are indefinite with regard to their order in time will be the physical prototype (Reichenbach, 1985: 165). The following can serve as an example of such relations of indefinite simultaneity:

(11) He was killed in the Civil War, maimed and burned to death in the thickets of the Wilderness...(Grau, 1964: 15).

Sentences of the kind are characterised by the fact that they are mono-subject statements [in example (11), the subject is "he"] with predicates having different semantic volume. The meanings of some predicates – "the left ones" – are broader and more abstract than those of the others – "the right ones". Actions that are conveyed by the "right" predicates can be included in the content of the concepts expressed by the "left" predicates. At the same time, the "right" predicates explain, exemplifying the semantic component that contains the more abstract "left" predicate. So, in example (11), **was killed** means **maimed** and **burned to death**.

It is also necessary to mention existing non-differentiated temporal relations which reduce to conveying convergence of actions in the same period of time without distinguishing between simultaneity and diversity.

In statements with indefinite temporal relations, when the distinction of simultaneity/diversity is irrelevant, each action is presented within the depicted taxis situation as that occupying an indefinite period of time and indefinite space, and can be interpreted as connected with not all but only some of the members of the subject name during this period. In such statements, the subject is usually plural with the meaning of the so-called distributive plurality:

(12) They pulled shutters, took curtains down, rolled rugs....covered mattresses with sheets of brown paper (Grau, 1964: 49).

In the sentence (12), the meaning of the subject (they) implies divisibility of the array into separate members, which allows attributing a particular action from the whole array of actions conveyed by the predicates of the statement to each individual member. Each of the actions (pulled – took – rolled – covered) acts as non-localised within the integral time and space of the entire taxis situation.

Thus, the following types can be distinguished in the semantics of simultaneity relations. Simultaneity can be strict (complete), and is then implemented in the language as absolute simultaneity, and non-strict (partial), implemented in the language as relative simultaneity. In addition to the said differentiated relation, simultaneity semantics may also include undifferentiated relations – those of "pseudo-simultaneity" and indefinite temporal relations – without distinguishing between simultaneity and diversity.

### 3.2. Simultaneity Relations in a Simple Sentence

In English, taxis relations of simultaneity can be observed in various types of syntactic structures, such as simple sentences, complex and compound sentences, non-finite verb structures, and sequences of several independent sentences.

In a simple sentence, abstract names are the primary means involved in expressing simultaneity relations. Such names in a reduced form are able to denote a situation synchronous with that represented by the predicate, which allows us to consider sentences with abstract substantives to be a specific form for expressing taxis relations of simultaneity, characterised by its own features. Thus, one of the main features of abstract names is the fact that, being the result of "extraction of such bits of reality as situations which are spatiotemporal properties of heterogeneous things", they express progressive events, actions or processes lasting in time (Cherneiko, 2010), e.g.:

(13) At times of **demand expansion** slower than the money **supply growth**, interest rates drop and stimulate money demand (Wolfgang, 1998: 217).

The nouns **demand**, **expansion**, **supply** and **growth**, are associated in our minds with the concept of duration, and, more importantly, these forms are related to situations simultaneous with those represented by the rest of the sentence. In other words, it is said in this example that when demand grows slower than money supply does, certain economic processes occur. In addition, in this case, temporal relations are indicated by the prepositional-noun group **at times**, which explicitly names the time period, the stage.

From a linguistic point of view, a special place in the system of means expressing simultaneity relations is held by prepositions (during, (along) with, through) because they are at the interface of vocabulary and grammar. For example,

(14) The expansion of global economic interdependence created novel arenas of international conflict along with economic growth (Gilpin, 1987: 183).

There is another preposition with the meaning of simultaneity – **under** – which initially has a locative meaning, but can acquire a temporal connotation in certain contexts:

(15)...economics is the social science concerned with how individuals, institutions, and society make optimal (best) choices **under** conditions of scarcity (McConnell, 2009 : 4).

Combination of adverbial meanings in simple sentences with prepositional-nominal groups has turned out to be quite common in economic texts. Structures with a combination of temporal and conditional meanings are more frequent than others, and sometimes it can be difficult to establish which of the meanings is principal and which one is interfering:

(16) Consumption of such items as potatoes decreases absolutely **with** income increase (Samuelson, 1961: 133).

In the following sentence, a verbal noun with the preposition **through** is used to convey synchrony (simultaneity). The preposition indicates the manner in which the action is carried out and the background against which another action takes place:

(17) Through **the erection** of entry barriers, **the use** of government subsidies, and **the husbanding** of domestic demand to give advantage to domestic firms, one's own corporations can acquire the economies of scale (Gilpin, 1987: 186).

In this example, the meanings of simultaneity and manner are combined.

### 3.3. Simultaneity Relations in Structures Transiting from Simple to Complex Sentences

As has been mentioned before, synchrony relations can be observed in sentences with homogeneous predicates and in structures with non-finite verb forms, which we classify as structures occupying an intermediate position between simple and complex sentences.

In general, expression of simultaneity relations in structures with homogeneous predicates is not typical for economic discourse. In addition, in sentences with homogeneous predicates in economic discourse, relations of the so-called indefinite simultaneity or "pseudo-simultaneity" can be observed when predicates name and characterise different aspects of the same denotation:

(18) Producers take risks and spend money to evade detection (Dolan, 1983: 29).

In this case, **take risks** is a predicate which is semantically broader and more abstract than **spend money**. Therefore, the meaning of the second predicate is as if limiting and included into the concept expressed by the first predicate.

It should also be noted that homogeneous predicates, conveying synchrony relations, are as a rule expressed by verb forms of the same time plane. Thus, in this example, synchrony related to the present is expressed by such correlation of aspectual-temporal forms as Present Indefinite: take risks – spend money.

Structures with non-finite verb forms are another means for expressing synchrony relations. According to L.K. Kozlova, the need to unite various actions, relations and properties of phenomena within a single sentence results in predominant use of sentences with non-finite verb forms in scientific texts (Kozlova, 1988: 18). For example:

(19) Previously the West European and Japanese economies had pursued aggressive export policies while simultaneously importing American goods to rebuild their own war-torn economies (Gilpin, 1987: 194).

In (19) above, apart from the conjunction **while**, the adverb **simultaneously** is added to the participial phrase which further emphasises simultaneity relations between the situation expressed by the main part of the sentence (West European and Japanese economies had pursued aggressive export policies) and that expressed by the participial phrase (importing American goods).

It should be noted that there is a combination of different adverbial meanings in this example. Thus, the meaning of simultaneity blends with that of concession: West European and Japanese economies pursued aggressive export policy, **although, at the same time**, they imported American goods.

We would like to mention another case of combined meanings which is no less interesting, namely, combining some commonly differentiated meanings such as simultaneity of actions and manner, a concomitant condition. However, this kind of combination is only possible in structures with secondary predication:

(20) By restricting the market in their favo[u]r, producers have eliminated some potentially advantageous exchanges...(Clark, 1987: 106 ).

In this example, the meanings of manner are expressed by the gerundial phrase: by restricting the market in their favour.

This range of phenomena also comprises sentences with non-verbal structures, such as:

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(21) With just a little economic understanding, it is possible, and even easy, to make big mistakes (Clark, 1987: 33).

This example illustrates a combination of causal, temporal and conditional relations.

### 3.4 Simultaneity Relations in Complex Sentences and Sequences of Separate Sentences

Complex sentences are another group of sentences in which synchrony relations can be observed. Such sentences with various temporal conjunctions are those containing the most diverse shades of temporal meanings.

A.I. Varshavskaya considers complex sentences to be the most specialised form enabling a subprocess of localisation – taxis. Localisation of events as the intellectual aspect of the subprocess is implemented in different ways, through conceptual categories, that is, through certain semantic relations (SR) (spatial, temporal, causal, conditional, etcetera). These SR act not only as “semantic references” used by speakers, but also as a way of operating other senses, expressed by predicative units in this case (Varshavskaya, 1984: 103 - 104).

A specific feature of the studied material is the combination of semantic meanings in adverbial groups (conditional and temporal meanings, concessions and time, causal-temporal syncretism). Language is considered as a system that is ‘rigid’ and ‘soft’ at the same time, comprising transitive, intermediate phenomena that do not contravene the idea of the integral systemic nature of the language structure, but, on the contrary, demonstrate flexibility and mobility of the language, allowing linguistic units to enable the nomination process in an adequate and optimal manner.

Therefore, ‘pure taxis’, free from anything beyond the limits of chronological relations, would be an abstraction that is far from linguistic ontology. Taxis cannot be considered irrespective of the said complicating semantic elements. Thus, without losing our focus on simultaneity as the semantic dominant of this category, we strive to take all the complicating semantic elements into account.

Let us consider interaction of causal-temporal SR: a combination of meanings that occurs when there is correlation of actions in a complex sentence, when meanings of condition and time or cause and time overlap:

(22) It appears that as income rises, the desire for leisure time grows stronger (Clark, 1987: 52).

This sentence combines temporal meaning with a shade of causality. But it is not always possible to determine exactly which of the meanings is principal and which one is interfering.

In this example, it is more likely that the desire for more leisure time grows stronger in parallel with an increase in income, and not because the income has increased.

Here, it should be noted that even in philosophy attempts have been made to derive temporal order from the causal influence of events on each other through the causal theory of time. In order to derive temporal relations in this way, causal relations, or relations of material impact of events on each other have to be determined, without any reference to the sequence of these events in time. But all attempts of this kind known so far have been obviously inadequate. (Molchanov, 1990: 89). Thus, in modern causal theory, temporal relations are not derived from causal relations but are identical with a possibility of the existence of the latter.

There are examples where blurring of boundaries between conceptual content fields, between SR, is less obvious, as in the examples below:

(23) As interest rates rise, foreign leaders shift funds to the United States from other countries in order to gain the higher return in the US (Clark, 1987: 518).

In this sentence, the meaning of the cause in the subordinate clause (SC) stands out more clearly against the background of the temporal relation of simultaneity. Moreover, in sentences of this type, the situation indicated by the SC denotation, as a rule, begins earlier than that of the main clause (MC):

(24) As inflation rates increased in the 1970s, inflationary expectations also increased (Clark, 1987: 320).

In this example, the fact that the action of the MC has begun later than that of the SC action is additionally indicated by the adverb **also**.

In the following examples, there is interference of opposition/concession meaning:

(25) While public services have a zero price to the individual, they may have a high opportunity cost to society (Clark, 1987: 51).

There is also an opposition in this sentence: individual vs. society, zero price vs. high opportunity cost.

Sentences of this group are distinguished by the fact that, as a rule, MC and SC subjects are coreferential. In addition, in the overwhelming majority of sentences of this type, the SC precedes the MC and has a presupposition.

In sentences of the following group, temporal meaning and juxtaposition are combined:

(26) Some growth industries were actually discouraged, **while** firms that subsequently declined received government assistance (Clark, 1987: 210).

In this sentence, the subject of the first part is juxtaposed with that of the second part based on the predicate. Growth industries were discouraged, but (while) firms that subsequently declined received government assistance.

Sentences with undifferentiated expression of temporal and conditional relations make up the largest group of examples:

(27) Businesses borrow to expand production and sales **when** they experience higher profits (Clark, 1987: 412).

The fact that businesses take loans to expand production is not a direct consequence of their high profits, but rather an action that logically results from the fact that companies make profits. The company's profitability is one of the conditions for taking loans.

The following example demonstrates several meanings combined at the same time: temporal (simultaneity), concessive, conditional and adversative.

(28) Markets are far from perfect allocation mechanisms, and occasionally they produce unwanted effects even **when** they are unrestricted (Clark, 1987: 89) – even when (though), even if ...

A particular difficulty in describing interaction of various SR lies in sentences in which several polysemantic conjunctions are present together:

(29) **As** the price of butter increases, the quantity of butter demanded decreases, **while** the demand for margarine (a butter substitute) increases at every price (Clark, 1987: 70).

In this example, SCs are connected by the conjunctions **as** and **while**, and there is blending of the causal and temporal meanings with a shade of juxtaposition. As the price of butter increases, the quantity of butter demanded decreases, **and (while)** the demand for margarine increases....

In the sentence in (30), the SCs introduced by the conjunctions **when** and **while** convey conditional, temporal, and juxtaposing relations.

(30) The figure shows that the quantity of labour demanded and employed falls **when** the minimum wage is adopted, **while** the quantity of labour supplied increases (Clark, 1987: 115).

The potential for interference of the meanings mentioned above is facilitated by polysemy, or, perhaps, by ambiguity of some conjunctions. Thus, the conjunction **when** conveys a wide range of semantic shades, as well as the conjunctions **as** and **while**. The latter can be either a subordinating, or a coordinating conjunction, then it has an adversative meaning, which will be discussed below. At the same time, the undifferentiated relations may result in ambiguity of the conjunction.

Above, we have considered complex sentences with subordinate clauses of time, however, synchrony relations are also expressed in complex sentences with other types of subordinate clauses, for example:

(31) Small firms are initially very dependent on internal capital (private/own, friends and family funds) **because their borrowing level is low** (Introduction, 1995: 996).

In this complex sentence with a subordinate clause of cause, the interaction of the causal and temporal meanings of simultaneity can be observed, and the causal meaning is the principal one while simultaneity is interfering.

In the following example with a conditional clause, simultaneity relation can also be detected in addition to the conditional one: production is curtailed **if/when** prices go down.

(32) **If prices go down**, production is presumably curtailed (Gordon, 1961: 6)

(33) Conversely, in nations **where the rate of growth of demand is more moderate**, individual firms tend to expand only incrementally...(Porter, 1990: 94).

In the complex sentence with an attributive clause (33), characterisation interferes with the temporal relation of simultaneity: firms in nations **where/in which/when** demand does not grow so fast expand slowly.

The same combination is possible in conjunction-less attributive clauses:

(34) Producers cannot understand clearly the price variations **they are observing** (Davis, 1971: 213).

However, conjunctive complex sentences in which semantic relations between predicative units are explicitly expressed, of course, prevail in economic discourse. Thus, in the following example a combination of several meanings can be seen: concessive, temporal (simultaneity) and conditional relations.

(35) Markets are far from perfect allocation mechanisms, and occasionally they produce unwanted effects **even when they are unrestricted** (Clark, 1987: 89).

Markets produce unwanted effects **even when/ if/although** they are unrestricted.

In many cases where concessive meaning is present, the subjects of the MC and SC are coreferential, as in the example above.

In describing interaction of different SRs, sentences with several polysemantic conjunctions, where not two, but three or more situations take place, are particularly problematic:

(36) As unemployment rises, the expected reduction in income and aggregate demand is limited automatically **when** unemployment benefits are paid (Clark, 1987: 338).

In this example, subordinate clauses are joined by the conjunctions **as** and **when**, and temporal, conditional and causal relations blend.

For complex sentences, factors that determine synchrony relations include aspectual-temporal correlations of verb forms. In this study, we did not intend to consider all possible correlations of aspectual-temporal forms in economic discourse in detail, as they largely coincide with the results obtained by M.Yu. Ryabova (Ryabova, 1993), in research of correlations of verb forms conveying synchrony of actions in literary texts. Here, we will only note the most general, basic patterns of expressing synchrony relations in complex sentences by means of aspectual-temporal forms.

As the research has shown, synchrony relations in complex sentences in economic discourse can be implemented by means of both monotemporal paradigms and bitemporal forms:

(37) As time went on and the need became more pressing, controls were relaxed and the production of diesel locomotives was stepped up considerably (Mansfield, 1968: 114)

In this complex sentence with a subordinate clause of time, synchrony of actions is conveyed by such a correlation of aspectual-temporal forms as the Past Indefinite tense: **went on, became – were relaxed, was stepped up**.

In the following example, multifaceted correlation of the Future Indefinite and Present Indefinite tenses is used to denote simultaneity in the future:

(38) You will pull your money out of savings and use it **while** it still has high value (Clark, 1987: 245).

The last two examples also illustrate the fact that in most cases synchrony relations occur against the background of modal consistency, i.e. the aspectual-temporal forms of correlated predicates have the same mood.

In compound sentences, simultaneity relations can be expressed by means of conjunctions (note 39) or without them (note 40):

(39) The demand for credit for business expansion fell, **and** the interest rate fell with it (Clark, 1987: 421).

In this example, simultaneity relation is additionally emphasised by the use of the preposition **with** together with the anaphoric pronoun *it*.

(40) Liberals consider these relations to be essentially harmonious; nationalists believe that conflict is inevitable (Gilpin, 1987: 188).

As for the conjunction combination, simultaneity relations can be implemented in various types of complex sentences. In addition to the sentence with a coordinating link (example 39), simultaneity relations can be expressed in sentences with an adversative link, for example:

(41) Some growth industries were actually discouraged, **while** firms that subsequently declined received government assistance (Clark, 1987: 210).

Some growth industries were discouraged, **and/while** firms that subsequently declined received government assistance.

In this sentence, in addition to the adversative relation between parts of the complex sentence, there is also an opposition in the meaning of lexical units: *growth industries – firms that declined, discouraged – received assistance*. As A.I. Berestova noted, there are different types of adversative relations with their specific means of expression and particularities of organising structures but for each of them, some general patterns of organisation can also be distinguished. These include, in particular, antonymic opposition of lexical units (Berestova, 1999: 234-235).

As has been mentioned above, the taxis relation of synchrony can go beyond a single sentence, connecting chains of separate sentences into a single integral situation:

(42) Moreover, the simplification of function made possible by specialisation lends itself to mechanisation and the use of labour-saving capital. **At the same time** it avoids the wasteful duplication of tools... (Samuelson, 1961: 51-52).

In this chain, the lexical explicator of simultaneity **at the same time** conveys temporal relation of simultaneity, which allows us to say unambiguously that the actions in these sentences occur simultaneously with each other.

It should only be noted here that connection between separate sentences can be provided by means of localisation process based on the same semantic relations as in complex sentences, for example, adversative ones:

(43) They (abundant natural resources) provide a satisfactory or even high level of national income without the need to upgrade the “diamond”. **But** this makes it difficult to move beyond advantage based on resources...(Porter, 1990: 564).

Finally, it should be emphasised once again that complete, strict simultaneity without combination with other meanings is not implemented at all in many cases, and semantics of taxis is reduced to general combination of semantic elements within a single period of time (Boyko, 2014, 2015).

#### 4. Conclusion

Economic texts have been used as material for the study. The importance of scientific communication in society’s life is growing extraordinarily, and the study of the language of scientific literature is becoming one of the most burning issues of linguistics. The role of economic relations in the life of society can hardly be overestimated. Economic relations form the basis of social life, which is confirmed by the entire history of the mankind.

Moreover, some concepts used in linguistics and other related areas of knowledge are based on economic ones. For example, the value/significance which underlies Saussure’s understanding of linguistic value and is defined as the value of an object within a system, corresponds to economic value when an object is perceived as a product and can be exchanged for another product in the market.

Research of the taxis meaning of simultaneity in economic discourse suggested itself, even only based on the essence of economic relations. The analysis showed that specific features of the economic text itself and economic relations it conveys determine the use and structural features of various ways of expressing simultaneity relations.

Analysis of conditions for implementation of the taxis meaning of simultaneity in economic discourse has made it possible to identify specific features of implementation of this meaning within different types of syntactic constructions, to study the ways the meaning of simultaneity interacts with other meanings included in the category of hypotaxis.

It can be hoped that accomplishment of the tasks set will give significant results in scientific and educational as well as in methodological perspectives. At the same time, it should be noted that the study of the problems considered in this work has not yet been completed and has prospects for further development.



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