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Апресян М.Г., кандидат филологических наук, профессор
Карапетян Р.Р., кандидат филологических наук, доцент
Петросян С.А., соискатель
(Ереванский государственный университет, Армения)

О ТОЧКАХ СОПРИКОСНОВЕНИЯ КЛАУЗАЛЬНЫХ АРХИТЕКТУР ЯЗЫКА ПРАВА И ФИЗИКИ

Настоящая статья посвящена выявлению сходства и различий в синтаксической организации языка права и физики в английском языке. Детальному структурно-функциональному анализу подвергаются такие синтаксические структуры, как сложноподчиненные предложения и причастные обороты употребляемые в вышеуказанных регистрах языка, принадлежащих различным областям науки. Первопочальный этап исследования заключается в изучении типов сложноподчиненных предложений, наиболее часто употребляемых в языке естественных наук, а именно в физике, а также в учете характерных особенностей их функционирования. Далее, соответственно, выявляются закономерности употребления вышеуказанных структур в языке права, принадлежащего к гуманитарным наукам. Авторами статьи делается попытка нахождения точек соприкосновения в функционировании сложноподчиненных предложений, сложносочиненных причастными оборотами, а также сокращенных зависимых предложений в языке права и физики. Авторы приходят к мысли о том, что исследования подобного рода, выполненные в свете функционального синтаксиса, могут внести определенный вклад в теорию специальных языков, в уточнение их дефиниций и классификаций.

Ключевые слова: язык права, язык физики, синтаксическая организация, сложноподчиненные предложения, причастные обороты, структурно-функциональная грамматика.

M.H.Apresyan,
R.R.Karapetyan,
S.A.Petrosyan
Romance-Germanic Philology Faculty
Yerevan State University
Alex Manoogian 1, 0025, Yerevan, Armenia

ON CERTAIN CONVERGENCE POINTS IN THE CLAUSAL ARCHITECTURE OF THE LANGUAGE FOR LAW AND THE LANGUAGE OF PHYSICS

The given paper aims at revealing distinctive features in the syntactic organization of the English for Law and English for Physics; specifically such syntactic units as complex sentences and participial clauses are subject to thorough structural and functional analysis in the registers mentioned. The initial stage of the analysis comprises examination of the types and characteristic features of complex sentences as used in the language of hard sciences, namely that of physics. Therein, an attempt is made to shed light on the regularities
of usage of these constructions from the angle of systemic-functional grammar. Afterwards, authors proceed to manifest the analogous use of complex sentences complicated by participial clauses, reduced clauses, as well as consecutive and parallel secondary clauses in the language of law with the aim of exploring convergence points in the structural and functional characteristics of the syntactic organization in the registers considered.

Keywords: Language for Law, Language of Physics, syntactic organization, complex sentences, participial clauses, systemic-functional grammar.

Special Syntax to Reproduce Specialized Knowledge

The existence of inseparable bond between form and content has been an axiom for centuries and laid a solid basis for scientific research in the field of Arts and Humanities. The given notion spread deep roots into linguistics as well and extensively framed the subsequent linguistic research shedding light on the development of language means and resources for both expressing the subtlest shades of meaning and maintaining linguistic functions. As is known, this idea proceeds from the theory of Functional Grammar developed by M.A.K. Halliday (Halliday, 2004). In the given paper we proceed from applying the underlying propositions of the theory mentioned, as well as its subsequent modifications and developments, to study the clausal architecture of two different special registers of language, namely the language of physics and the language for law, with the aim of revealing the convergence in the usage regularity between the two as predetermined by similar functions they come to perform. The comparative analysis of such different fields runs as follows. The language of hard sciences, in the given case physics, is accepted as a special register with special narrow terminology and syntax, whereas the language of law does not yet have this status of a special language bordering between neutral and special registers. It is assumed that syntax - the material framing of content - can be indicative of peculiarities of this or that register. Hence, this paper is an attempt to detect whether there are similarities between the language of law and the language of hard sciences from the perspective described.

The fundamental proposition of modern linguistics, emphasizing the functionality of language as such, serves a basis also for the study in question, for we assume that the language of science is strongly predetermined by the specificity of science itself, its role and purports to be accomplished. It is to be mentioned that we choose to concentrate on the syntactic organization of scientific speech, because such underlying principles and purports of scientific organization as judgement, generalization, evidence, report, etc., are explicitly expressed in the scientific texts via specific syntactic constructions. Nevertheless, before proceeding to the issue of investigation proper, it is considered reasonable to highlight the aspects of linguistic organization of the texts and registers that make them special. The answer to this question is to be sought at various linguistic levels, from phonological to textual. Within the frame of this paper we limit the scope of the research to the syntactic level.

The formation and evolution of special languages was a natural reaction to the external stimulus, namely rapid development of science, technology and societal practices. Undoubtedly, language was bound to undergo certain changes in its structure to serve these new, rapidly developing spheres of life. Obviously, the lexical and terminological language novelties that appear as reactions to the external changes are much more conspicuous. However, the structural and syntactic adaptations seem not less crucial, since it is the syntax that accounts for the thinking processes and is the direct indicator and reflector of the mental work and ideation processes as expressed in language. As is known, special languages are meant to facilitate the communication between specialists, who being involved in the same professional and mental environment, also come to share similarities in mentality. Hence, one of the first criteria to determine the extent of speciality of this or that language is how narrow the circle of people who use and understand this language is. Particularly, it is of crucial importance to clearly perceive and fully comprehend the development of thought, numerous inviolable logical links
between the ideas mentioned which provide the meaning of the message conveyed, ability to combine and unite notions in phrases or sentences in a way not to distort, but at the same time to clearly reproduce the complex relations of the extralinguistic realia via the relations of the linguistic units. In other words, the syntax of any special language maintains the ideational language metafunction. This concept is also the elaboration of the systemic functional grammar and explains how the relationship between the language and extralinguistic realia is maintained. Namely, the ideational metafunction of language is concerned with ‘ideation’, i.e. the construction of our experience of the world around us and inside us by means of language units (Matthiessen and Halliday, 1997:12-13).

With respect to the question in hand, we proceed from the assumption that the language of physics and the language of law are extremely complicated due to the necessity to reproduce complex and multifaceted relations both in nature and in social life. These relations need to be grouped and placed in felicitously organized sentences for the reproduction of verified and realistic facts. This calls forth the necessity of complex sentences which would encompass a series of predications in the same sentence to provide the smooth unfolding of the idea without its actual disruption. Below we purport to trace how this function is reflected in legal and scientific prose, and whether the two genres are similar in the realization of this function. Initially the scientific prose will be examined along the lines mentioned with the corresponding examples presented and analyzed. Afterwards, a parallel comparison will be conducted with the similar sentences from the legal discourse to manifest the existence and use of analogously organized syntax in both of the registers, which is preconditioned by the same function which these registers fulfill.

Clausal Architecture of the Scientific Register of Speech in the Light of Systemic Functional Grammar

Two syntactic constructions, namely complex sentences and participial constructions, distinctive for reflecting the interaction of various extralinguistic facts, are subject to investigation within the framework of the given work. As already mentioned above, the language of science stands out by its complexity not only as a result of overloaded and special terminology, but is heavily preconditioned by the intricacy of scientific thought. The ideas and statements in scientific deliberations are interconnected and interdependent in a tight and sophisticated manner, the close logical link between the notions considered by science predetermines a natural flow of one statement into another. Unless this transition is smoothly realized by appropriate linguistic means, the scientific message conveyed is sure to be lost. Thus in the paper we assume that this function is optimally fulfilled by complex sentences and participial clauses, which provide the coherence, transparency and accuracy of scientific register of speech. Let us consider a number of examples borrowed from the scientific register of speech, namely highly specialized papers in physics. It is to be mentioned that the authors of the papers analyzed are not only prominent and widely known authorities in the field of physics but also native speakers of English. Four papers by Edward Witten and Michael Duff, published in the archive of electronic preprints in physics, mathematics, computer science, and non-linear sciences (arxiv.org) were chosen for the analysis, the overall number of pages analyzed being 175. The papers chosen are strictly professional with special vocabulary and syntax. In the examples below we present a sequence of complex clauses within one sentence which is logically justified by the nature of science.

1 Yet later, researching into quantum gravity which attempts to combine quantum mechanics, relativity and gravitation into a coherent unified framework, I learned about the Bronshtein-Zelmanov-Okun (BZO) cube [11, 12, 13], with axes h, c1 and G, which neatly summarizes how classical mechanics in the absence of gravity, non-relativistic quantum mechanics, Newtonian gravity and relativistic quantum field theory can be regarded respectively as the (h; c1; G), (c1; G), (h; c1) 0, and (G) 0 limits of the full quantum gravity. (Duff, 2014:5).
In measuring the distances along the x, y and z axes in metres and distances along the t axis in seconds one is reminded that sailors measure distances along the x and y axes in nautical miles and distances along the z axis in fathoms. (Duff, 2014:10).

As already stated, G enters the Friedmann equation, and so even if one considers a dimensionless ratio, such as Gmp~hc, there are still complications over whether the cosmological framework is even self-consistent, in addition to whether the cosmological perturbations might evolve differently. (Duff, 2014:17).

The sentences above present a vivid example of how scientific argument is gradually constructed via the exploitation of complex sentences complicated by participial constructions and a series of parallel clauses, which not only exhibit the step by step unfolding of scientific thought but also combine different predication lines manifesting the complete and unified picture of the phenomena described. To be more specific in sentences 1-3 we have complex sentences with the relative secondary clause, of object and condition, respectively. Moreover, each of the sentences presented is overcomplicated by participial constructions (e.g. researching into quantum gravity which attempts to combine quantum mechanics; in measuring the distances along the x, y and z axes in metres and distances), reduced clauses (e.g. as already stated), and consecutive secondary clauses.

Here we find it feasible to refer to the theory of Systemic Functional Linguistics, according to which language is a system of paradigmatic set of alternative features, of which one must be chosen to the best realization of specific functions (http://www.annabelleukin.com/hallidays-functional-grammar.html). Thus, we see that complex sentences modified by overcomplicated reduced syntactic units are favored over a wide range of simpler sentences and complete predications.

It is also to be stipulated that at the given stage of analysis we do not reside to the statistical quantitative method of research, instead focusing on the qualitative structural investigation of complicated syntax in the language of physics, where complex sentences apparently prevail. Below we intend to draw parallels between the language of physics and the syntactic peculiarities of the language of law along the given line. The ultimate aim of the latter is to demonstrate the similarities between the syntactical organization of both registers.

Analysis of Complex Sentences in the Language of Law as Compared to the Language of Physics

Currently specialists in Functional linguistics differentiate between two subgenres of legal speech, namely the register of Law and the register of Legal studies (Глинская, 2002; Apresyan, 2014). While the latter can be considered as a type of scientific informative writing, the first sub-register is purely professional, comprising official-documentary style. It is in these documents where the legislative thought is framed in its entire complexity, exploiting the most sophisticated syntactic means to this end. The complexity of the legal language is a real challenge to all those involved with the legal practice, so linguistic endeavor in this direction may contribute significantly to the correct interpretation of laws. According to Gibbons (Gibbons, 2003: 69), “whatever the technique used, the linguist would clarify and make more concrete and explicit the basis for [judicial] deciding, and in some cases might provide useful additional information.” In this sense, the role of thought unfolding and its corresponding syntactic framing acquires utmost importance. Simultaneously, it becomes manifest that the language of law has its unique niche among all other professional languages and can be challenged to be a special language itself. Obviously, the proof of this hypothesis cannot be limited to a single paper, and should be conducted comprehensively with the inclusion of all the linguistic levels and the appropriate linguistic units. In the paper given we embark on the analysis of complicated language structures, namely complex sentences complicated by numerous predication lines by means of secondary and participial clauses. The goal is to demonstrate the specificity of legal thought, its sophisticated character and polyhedral nature. As is claimed, these complicated
and tightly interlinked relations could be best ideationalized in language via complex sentences. The special role and the consequent abundant use of complex sentences in the legal discourse is also evidenced in a number of works (Schneidereit, 2014:10-13). Hence, at this plane the parallel between the function and its realization in the scientific registers becomes apparent.

Below we present a detailed analysis of the sentences borrowed from sample notary documents and “Notary Public Online Manual” of the South Carolina Secretary of State’s office (South Carolina Secretary of State’s Office 1205 Pendleton Street, Suite 525 Columbia, SC 29201 Phone 803.734.2170 • Fax 803.734.1661 Revised in 2014). All the examples are analyzed along the lines presented above as in case of the analysis of the scientific register of speech, i.e. overcomplicated complex sentences modified by numerous syntactic constructions. Additionally, parallels are drawn with the similar sentences form the highly professional texts of physics which are presented immediately afterwards. It is to be stated once again that the goal is to show that out of the whole arsenal of possible syntactic units (e.g. simple sentences, constructions marked by complete predication, etc.) the two registers considered opt for more complicated syntax, which, in our view, is preconditioned by the functions they are meant to fulfill.

Let us consider the following sentences:

4 I, Joe Q. Notary, having been duly appointed and commissioned a Notary Public in and for the Commonwealth of Pennsylvania, do solemnly swear (or affirm) that I will support, obey and defend the Constitution of the United States and the Constitution of this Commonwealth and that I will discharge the duties of my office with fidelity.

5 Before me, the undersigned notary public, this day, personally, appeared X to me known, who being duly sworn according to law, deposes the following: Affiant’s statement.

6 If the product of the entered unit price and the estimated quantity is exactly off by a factor of ten, one hundred, etc., or one-tenth, or one-hundredth, etc. from the entered total, the discrepancy will be resolved by using the entered unit price or item total, whichever most closely approximates percentage-wise the unit price or item total.

Above presented are three sentences, expressing sophisticated notions the meaning of which is tightly intertwined and formulated by complicated syntax. Thus, in (4) we have a complex sentence with the subordinate of object, complicated by a past participial construction and double parallel secondary clauses; (5) is a complicated sentence with an inversion and an absolute participial construction; (6) is a complex sentence of condition, modified by a participial clause, a relative clause and enumeration.

Below presented are analogous sentences from the language of physics with the highest degree of approximation possible:

7 In defining differential forms on a supermanifold, we define the exterior derivative to be odd, so dz is odd and anticommutes with Q, while dQ is even and commutes with Qand dz. (Witten, 2015:6)

8 The resolution of the first point is simply that, as explained in [1], if E is a superRiemann surface, with reduced space Ered, then Ered can be embedded in E in a way that is not canonical (or holomorphic) but is unique up to homology. (Witten, 2015:9)

9 This pole does not lead to additional contributions in the Ward identity (8.4) because when the Ramond divisors are associated to conjugate points p1; p2, the fermions of the matter system have many zero-modes that cancel the potential singularity due to the pole in the period matrix. (Witten, 2015:33)

So, in sentence (7) we have a complex sentence of result where the main clause is modified by a participial clause introduced by a conjunction in; (8) is a complex sentence of object where the secondary clause is complicated by a reduced participial clause and an absolute construction; example

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(9) is a complex sentence of cause where the secondary clause is modified by a temporal secondary and relative secondary clauses. Hence, the similarities of the syntactic construction of sentences and the intricacy of specific notions enveloped in the appropriate linguistic structures in the language for law and the language of physics become fairly evident from the sentences considered.

To further ground and exemplify this convergence let us present more sophisticated cases of complex sentence use in the genres discussed:

10 If this proposal shall be accepted and the undersigned shall fail to enter into the contract and furnish the 2 bonds in the sums required by the State Contract Act, with surety satisfactory to the (City, Country), within 8 days, not including Saturdays, Sundays and legal holidays, after the bidder has received notice from the (City, Country) that the contract has been awarded, the (City, Country) may, at its option, determine that the bidder has abandoned the contract, and thereupon this proposal and the acceptance thereof shall be null and void and the forfeiture of the security accompanying this proposal shall operate and the same shall be the property of the (City, Country).

11 If one changes the A-cycles that are used in defining it, the super period matrix is transformed by an element of an integral form of the supergroupOSp(2|2g), generalizing the fact that in the classical case (or for a super Riemann surface without Ramond punctures), the period matrix is defined up to the action of an integral form of Sp(2g). (Witten, 2015:3)

Example (10) from the register of law is a complex sentence of condition where the subordinate clause is heavily overcomplicated by two predicative lines, an absolute construction, a participial clause, and a conditional secondary clause; the main clause is also a complex sentence with the subordinate clause of object which in its turn has four predications. Example (11) presenting the genre of the scientific prose is a complex sentence of condition where the secondary clause is modified by a relative clause, and the main clause is modified by a participial construction which in its turn is modified by an object clause.

The authentic examples analyzed above leave no room for doubt concerning the fact that the thoughts of high sophistication and intricacy as in law and science employ equivalent linguistic means for the reproduction. Consequently, these convergence points in opting for the similar syntactic units for the expression of complicated notions by the language of law to a certain degree equate the latter with the language of physics. In this sense the language of law can be hypothesized to be a special language.

Concluding Remarks

The analysis conducted above comes to corroborate the hypothesis of the complexity of specific registers of speech arising from the specificity of these registers, the functions which they perform, a very conventional feature of both – language of physics and language of law - for the chain unfolding of ideas within the same sentence, and presence of tightly intertwined ideas which are bound to be presented within the same sentence for the provision of text unity. Thus, all these characteristics are equally typical of both registers of speech. Although not comprehensive and without reference to the entire style analysis, this observation of a specific linguistic unit functioning in the speech of the registers discussed, is vitally important for the style formation, due to the fulfillment of the basic fundamental functions analyzed above.

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