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Information Entropy of Literary Text and its Surmounting in Understanding and Translation

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The history of world civilization is a complicated and continuous process of receiving, processing, conservation and exchange of information. The cultural information presented in linguistic, mythological, musical, graphic and literary semiotic systems takes special place in the exchange of information. Literary texts are extremely interesting from the point of view of encoded information which is decoded in the processes of perception and understanding and recoded in the process of translation. The effective processing of information within literary texts needs a comprehensive approach and strategy. The modern tendencies of science and art unification give the possibility to use some scientific categories and notions in the new application spheres allowing us to describe some objects of humanities more precisely and effectively. The usage of the notion of entropy for the analysis of the variability within literary translation and original unexhaustiveness helps to find the optimal methods and strategies of translation.

Keywords: universal categories, unifying factors, information, literary translation, perception, understanding, ambiguity, symmetry, entropy, order, disorder, cultural capital, textual grid, translation variability, original unexhaustiveness, translation isomorphism.

Introduction

The last decades of scientific world history reveal the clear tendency of determination and investigation of universal categories able to describe the processes and phenomena which occur in such completely different (at the first glance) areas of the spiritual and intellectual human activities as 'art' and 'science'. The search of the factors which unify art and science is conducted by representatives of different scientific fields. The most interesting findings have appeared recently. The obvious highlight in this context is the book by G. Caglioti «От восприятия к мысли» [5] (the title of the Russian translation from the German

translation published in 1990 [20]) which is devoted to the dynamics of ambiguity and broken symmetry in art and science. The original title of the book written in Italian is the following «Simmetrie infrante nella scienza e nell'arte» [21]. The English translation is «The Dynamics of Ambiguity» [22]. In the original title as well as in the titles of numerous translations we can find the following universal categories: perception, thought (thinking), ambiguity, symmetry.

What is translation: art or science?

The object of our research is translation; to be more exact – literary translation. The

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centuries-old history of practical literary translation and comparatively long history of literary translation theory convince us that the previously mentioned universal categories are relevant for literary translation as well. We can recall the idea, popular with the practical translators and the specialist in theory, that the literary translation is placed at the point of intersection of science and art [14, 15, 32]. According to the opinion of the Egyptian translation theorist, translation is a modern science situated in the point of merging of philosophy, linguistics, psychology and sociology [27]. Literary translation could undoubtedly belong to all these scientific areas. It interacts with different kinds of art and with numerous cultural and intellectual disciplines. Until the literary translation was not formulated as a set of regular rules which makes differences in methods, ways and the results of translation process possible. These differences are undoubtedly determined by the translator's personality. If we consider the literary translation to be art, this art is extremely subjective.

So the translation could be defined as science, art and translation experience. Translation can be considered to be a science as it requires awareness of the structure and system of the two languages involved within the process of translation. As art, translation can be recognized on the basis of the fact that it demands artistic talent to reconstruct the original text into the form of target product which will be perceived and realized by the reader who has never read the original text. Translation is also a very specific experience because it gives the opportunity to make decisions when translating and overcoming difficulties of translation using various translation strategies. Translation can be defined by a popular neo-term «science-art». Theoretically translation is a peculiar hybrid science or hybrid art.

Original variability and unexhaustiveness of literary texts

Being one of the most ancient types of human activities translation occurred promptly after development of the second signal system allowing human beings to communicate on a verbal level and developed later multilingualism. During many centuries of practical translation (first oral translation and then written translation) led to the emergence of the theory of translation including theory of literary translation. The review of multiple opinions of literary translation phenomenon is not the aim of the present research. Let us concentrate on the basic modern approaches to solution of the problems specific to this area of translation. All existing theories can be allocated to two schools of thought. The first of these is presented by researchers-translatologists whose approach to the solution of literary translation problems is that from the angle of linguistics. The researchers-translatologists consider first and foremost linguistic parameters of original and target texts as well as the process of translation. Another school of thought is comparative literature studies in which emphasis is placed on the fact that, primarily, literary texts being an integral part of literature and culture of original language undergo translation recoding. Being recoded into another language these new literary texts should occupy a certain place in literature and culture of the target language. In this context the idea of A. Lefevere about the existence of a national text and cultural grids [19], whereby literary texts take a certain place is very fruitful. That is why literary translation should be conducted taking into consideration potential place of this text in the cultural context of the target language. Postulating the cultural capital and textual grid hypothesis A. Lefevere stressed the importance of taking into consideration the position of the original literary text in the context of the original culture and the possible position of the target text

in the context of translating culture. A. Lefevere stated that there are instances in cultural texts which reveal significant similarities when the original text and the target text are actually equal. Such cultures in the distant past had a common cultural source that allowed them later to preserve a certain similarity. Some cultures possess unique text grids and are characterized by genuine homogeneity.

Thus, one can consider the hypothesis that the peculiarity of literary translation based on linguistic and cultural factors causes significant problems when taking into consideration textual grids represented in the cultures participating in translation process. Literary texts included in textual grids of their own culture are key texts which are the objects of translation many times.

The possibility of the existence of several translations of key texts of a certain culture into one or more foreign languages initiates a phenomenon of translation variability [12, 13]. The category of translation variability is a relatively new category in translation theory used first of all in literary translation. Translation of texts of the informational type used mainly to get precise information does not require several versions of translation into one language given the availability of the first translation is of high quality. Literary text containing information of aesthetic type is originally ambiguous and suggests existence of multiple variants of its understanding and interpretation both on the stage of perception and decoding of original literary text within frames of native language and culture and when recoding text by means of other languages and cultures. In translation theory there are different points of view on the essence of translation ambiguity. Thus, Yu. D. Levin defines translation ambiguity as the «possibility of existing in the given national literature of several translations of the same foreign language literary work which has in the original as a rule

only one text implementation» [9: 213]. R. R. Tchaikovsky apposing Yu.D. Levin disagrees with possibility of existing of translations in «a given national literature» and suggests considering the phenomenon of translation ambiguity in the context of translation literature as «a third literature» placed between foreign language literature and target language literature [12]. Different points of view on the phenomenon on translation ambiguity don't question such category features as derivativity, simultaneousness, dyachronity and unexhaustiveness of the original which allows to formulate postulates of translation ambiguity [13: 188-198].

Deep analysis of the phenomena surrounding the ambiguity of translation allowed R.R. Tchaikovsky to come to the conclusion that each original contains the possibility of its numerous translation. This possibility provides potential textual variability of any literary work. In the researcher's opinion the original text generates translation variants but the index of textual variability varies according to different factors. Let's suppose one of these factors is belonging of the original text to textual grid of the source language. From our point of view another important factor providing textual variability is the character of information volume of a literary text. Using a universal scientific term such a condition can be defined as 'the condition of entropy'.

Literature studies and linguistic directions exist relatively independently. At the moment it's difficult to mention any author or national theory of translation which would combine the two directions effectively. As present research has been carried out mainly in the frames of linguistic theory of translation then of the main tasks is description of translation mechanisms providing the most complete interpretation of formal parameters related to the content of the original text. To solve this problem we attempt to use universal scientific categories. These

categories give us a new insight into translation process and reveal natural interdisciplinarity of translation as the type of intercultural and interlinguistic communication more fully. Such an idea seems to be quite fruitful.

Searching unifying factors

One of the important features of literary text and literary translation is regular ambiguity. This is ambiguity which provides multiple interpretations of information (content) of literary text both within the limits of source culture and language as well as when recoding text by means of another language and culture. Ambiguity is the basis of such phenomena of literary translation as unexhaustiveness of the original and translation variability implying its potential multilingualism.

G. Caglioti analyses the notion of ambiguity both on the level of perception as well as on literary and cultural levels. Researching the notion of ambiguity G. Caglioti spectacularly demonstrates modern process of blurring boundaries between humanities and natural sciences. The positive side of this process is the transition from fragmentarity and narrow specialism in surrounding world perception to complexity and comprehension of understanding the world and process and phenomena constructing it. This approach of an Italian physicist in many ways is similar to research principles of another famous physicist N. Bohr who formulated widely known principle of complementarity [1]. Bohr's complementarity principle allows to consider various phenomena of science and art as entities integrating continuity of thinking and discretion of perception, which requires integrative approach to studying these phenomena. One such phenomenon is translation.

Starting from perception dynamics G. Caglioti allocates such categories as symmetry, entropy, order, information and ambiguity to the

factors unifying science and art. Considering ambiguity in relation between a human being and natural structures a researcher first turns to considering such categories as symmetry and order [5: 14]. Following R. Arnheim [18] G. Caglioti does not consider these categories equivalent. Order suggests existing of the simplest most symmetrical and most regular form. With R. Arnheim the notions of order and simplicity are very close but G. Caglioti expresses the opinion that these notions should not be identified with symmetry and he defines symmetry as an invariant in the process of transformation [5: 24].

The most general definition of symmetry you can find with G. Weil who considers an object 'symmetric' when it can be acted up on without changing the object itself [2]. For objects in a system which consist of equivalent (of some kind) parts (elements) such objects are the transformations of the exchange of 'object parts' in which the system structure is generally preserved. To be more exact the total sum of system elements and the relations between them existing before the transformation are preserved. The group of transformations (in the mathematical sense) is formed by total sum of transformations preserving the fixed object. Each transformation has a reversed transformation which returns the object in its initial condition. The issues of correlation between order and chaos have been studied before. The best-known scientific school is considered to be the school of I. Prigozhin [11]. Discussing the higher forms of symmetry G. Caglioti shares the idea of A.V. Schubnikov and V.A. Koptsik that behavior of symmetry as the function of the state of the isolated system correlates with the behavior of its entropy. The highest symmetry is gained under the condition of the system's balance [34]. According to G. Caglioti the highest symmetry appears with the largest entropy, with the largest disorder. Entropy is a sort of system, in which the process

of its evolution changes its measure. Ambiguity appears at the crossing point of entropy (change, disorder) and preservation. Ambiguity plays the main part among factors unifying science and art. «At the very place where science meets art, truth meets beauty, beauty meets nature, and language becomes at the same time analytical and syntactical, precise and polysemantic, rational and intuitive, esoteric and exoteric. In one word it becomes ambiguous» [5: 71]. The existence of two opposite and incompatible aspects generates ambiguity. On the other side G. Caglioti thinks that ambiguity appears at the crossing point of symmetry and information. The mentioned above means that the most important scientific categories are entropy and preservation, information and order, symmetry and ambiguity.

Entropy in science, humanities and translation

The notion of entropy was initiated in XIX century by German scholar Clausius as characteristics of the ‘disorder degree’. It became possible to estimate such qualitative notions as order (or structure) and disorder (or chaos). The lexical unit «entropy» is of Greek origin and means «rotation», «mutual transition», «transformation». In physics the idea of entropy is considered in the following way: when only one micro condition exists then entropy equals null (which corresponds to full order or the absence of disorder); with an increasing number of micro conditions entropy also increases. The second thermodynamics law defines the state of entropy as the main feature of world disorder. If the first law of thermodynamics postulates energy conservation than the second law of thermodynamics states that entropy of the world tends to its maximum and energy is dispersed and disappears. The theory of entropy is, in a way, an allusion to cosmic energy emitted by the universe and is an integral part of nature. S. Angrist and L.

Hepler give the following definition: «entropy can be defined as a quantitative measure of disorder in a system...» [16: 8].

At present there is a stable tendency in using this classic term of thermodynamics in other scientific fields. Concepts of physical and informational entropy are applied to linguistic, logic, financial, numeric, economic, social and military systems [18, 25, 29]. For simple systems, entropy is a function of variables describing the condition of equilibrium. For complicated isolated systems the essence of entropy is to reach its maximum value at equilibrium [5: 97].

After World War II the notion of entropy was transformed and correlated to the theory of information. For the first time universal laws of information were formulated by C. Shannon in his work in 1948 [33] where he considered such problems as order and disorder, errors and errors’ control, possibilities and actualization of possibilities, ambiguity and ambiguity limits. Shannon’s idea of entropy is used in the new context which later allowed the formulation of the idea of information entropy.

The notion of entropy in the context of art was studied in work by R. Arnheim [18]. The author writes, that the order is a necessary condition for everything that could be realized by the human mind. The order prescribes similar and different features in compared objects. External order is the reflection of internal order irrespective of physical, social or cognitive nature of the objects. Form should be organized but it could not fully correspond to the representing structure. Lack of correspondence between external and internal order generates the order collision which provokes the element of disorder [18: 2]. As L. Whyte stated, the surrounding world is represented by two cosmic tendencies: one is the tendency of mechanical disorder (the principle of entropy) and another is the tendency to geometric order (crystals,

molecules) [35: 27]. The both tendencies are vividly represented in pictorial art (Malevich, Dutch still lives). The similar tendencies could be found in literature and music. However the implementation of the notion of entropy has changed considerably during the period of its functioning. If in the XIX century the notion was mainly used for diagnosis and explanation of cultural degradation, in the XX century the notion began to be used in positive sense for the explanation of minimalist art and the joys of entropy. In the other work by R. Arnheim disorder is defined not as the absence of order but as the collision of uncoordinated orders [17: 125]. R. Arnheim investigates the interaction of entropy and information from the point of view of the theory of information and apposes entropy to information. The transmission of information means the order conservation. The author expresses the hypothesis that the complete disorder provides the maximum quantity of information and as the information is measured by order – the maximum order is transmitted by maximum disorder [18: 15].

There were several attempts to use the idea of entropy in linguistics. In India in 1994 a book was published devoted to entropy in the play text «Othello» by W. Shakespeare [30]. The author relates such linguistic notions as slang, idioms, and dialectic units to entropy. So entropy is constituted by phonology, vocabulary, grammar and syntax [30: 3]. Particular great attention is devoted to entropy generated by phonological phenomena; assonance, alliteration, rhythm, metre, sound symbolism, onomatopoeia. The psycholinguistic and sociolinguistic types of entropy are described. These types of entropy make the understanding of literary text more difficult. The notion of negative entropy could be also found in the work. Negative entropy is the order measure and is the organic unit of similarity in literature. The idea of negative

entropy is presented in R. Carnap's works who agrees with the statement that negative entropy is transformed into information and vice versa [24].

Entropy is the function of system condition and serves to be the measure of transformation and system evolution. As the process of translation implies the interaction in this process of two textual systems so the universal category of entropy (the universal nature of this category is proved by its effective usage in different fields of science) could be used to describe the mechanism of transformation of the original text into the target one. The meaning of transformation is of extremely great importance for translation process as the transformation of the original text into the target text is the complex transformation of initial and final conditions. The universal nature of the category of entropy permits the use of this category to describe the condition of the information in the original, surmounting the difficulties of information transmission in the translation process and creation of a new text with information entropy. Translation entropy is directly connected with another universal category of translation – the category of cognitive dissonance [3]. The success in surmounting cognitive dissonance depends on the degree and type of translation entropy.

The last but not the least universal scientific category transferred from science into translation study is the category of isomorphism. In general the category of isomorphism is used to determine similarity of organization inside a certain object or between two or more objects [23, 26, 28]. In linguistics and translation this category implies a sort of parallelism in the original and target texts [4, 6, 7, 8, 10, 31, 36]. That is why we can speak about structural isomorphism, information isomorphism and entropy isomorphism in translation.

Conclusions and future work

Thus the usage of the category of entropy in translation study gives possibility to enlarge the category paradigm of the theory of translation and to find new approaches for consideration of such complicated phenomena of literary

translation as translation variability, original unexhaustiveness, quality of translation. The category of translation entropy could give interesting results in the study of translation isomorphism which is also of heterogenic origin.

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Информационная энтропия художественного текста и ее преодоление при понимании и переводе

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История мировой цивилизации представляет собой сложный и непрерывный процесс получения, обработки, сохранения и обмена информации. Культурная информация, представленная в лингвистических, мифологических, музыкальных, графических и литературных семиотических системах, занимает особое место в информационном обмене. Литературные тексты крайне интересны с точки зрения закодированной информации, которая декодируется в процессах восприятия, понимания и перекодирования при переводе. Эффективная обработка информации художественного текста требует всеобъемлющего подхода и стратегии. Современные тенденции унификации науки и искусства дают возможность использовать некоторые научные категории и понятия в новых сферах применения, позволяющих описать некоторые объекты гуманитарных наук более точно и эффективно. Использование понятия энтропии для анализа множественности художественного перевода и неисчерпаемости оригинала помогает определить оптимальные методы и стратегии перевода.

Ключевые слова: художественный перевод; восприятие; понимание; неоднозначность; симметрия; энтропия; порядок; беспорядок; культурное достояние; текстовая решетка; переводческая множественность; неисчерпаемость.
