# SCIENCE FICTION 'TECHNOBABBLE': LEXICAL FEATURES AND TRANSLATION CHALLENGES

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*The research paper considers the lexical features and translation problems of pseudoterminology in science fiction. The use of pseudoterminology in science fiction works is due to the author's desire to create an illusion of realism for the reader/viewer by using words and combinations of words similar to scientific terms that reflect the realities of the world created by the author. The lexical features of pseudoterminology coincide with the lexical features of real terminology, but the meaning is different, which poses a translation problem. The source material for the study consisted of 100 examples of pseudoterminology used in the dialogue of science fiction films and TV series (Back to the Future, Blade Runner, Doctor Who, The Hitchhiker's Guide to the Galaxy, Stargate SG-1, Star Trek Voyager and Torchwood). The material was selected using a continuous sampling method and analyzed using a statistical method. The article examines the concept of pseudoterminology, its lexical and structural features. The study analyzes the methods of translation and transformation used by translators to convey the pseudoterminology of the original text in Ukrainian. Structurally, pseudoterms are divided into single-word and combinations, which, in turn, are divided into two-component, three-component and multi-component. It was found that the most frequent transformations used in the translation of pseudoscientific terminology in science fiction texts are tracing, transcoding and modulation, which coincides with the reproduction of real terms in the corresponding texts. Scientific research revealed that the translation of pseudoscientific terminology requires significant transformations on the part of the translator to create an adequate parallel text and bring the translation closer to equivalence.*

*Key words: pseudoterminology, lexis, structure, fiction translation, science fiction, transformations in translation.*

*Чернікова О. І. Псевдотермінологія в науковій фантастиці: лексичні особливості та проблеми перекладу*

*У розвідці розглядаються лексичні особливості та перекладацькі проблеми псевдотермінології у науковій фантастиці. Вживання псевдотермінології у науково-фантастичних творах обумовлено бажанням авора створити ілюзію реалістичності для читача/глядача, використовуючи слова і сполучення слів, схожі на наукові терміни, що відображають реалії створеного автором світу. Лексичні*

*особливості псевдотермінології збігаються з лексичними особливостями реальної термінології, проте значення відрізняється, що становить перекладацьку проблему. Фактичним матеріалом дослідження слугували 100 прикладів псевдотермінології, вжитої у діалогах науково-фантастичних фільмів та серіалів ("Назад у майбутнє", "Той, що біжить по лезу", "Доктор Хто", "Автостопом по галактиці", "Зоряна брама", "Зоряний шлях: Вояджер", "Торчвуд"). Матеріал було відібрано методом суцільної вибірки та проаналізовано з застосуванням статистичного методу. У статті розглянуто поняття псевдотермінології, її лексичні та структурні особливості. У дослідженні проаналізовано способи перекладу та трансформації, до яких вдавалися перекладачі задля кращої передачі псевдотермінології оригінального тексту українською мовою. Структурно псевдотерміни поділяються на однослівні та сполучення, які, в свою чергу, поділяються на двокомпонентні, трикомпонентні та багатокомпонентні. Встановлено, що найчастотнішими трансформаціями, вжитими у перекладі псевдонаукової термінології у науково-фантастичних текстах, є калькування, транскодування та модуляція, що збігається з відтворенням реальних термінів у відповідних текстах. У науковій розвідці виявлено, що переклад псевдонаукової термінології потребує значних перетворень з боку перекладача для створення адекватного паралельного тексту та наближення перекладу до еквівалентності.*

*Ключові слова: псевдотермінологія, лексика, структура, художній переклад, наукова фантастика, перекладацькі трансформації.*

**Introduction.** The article is focused on the lexical features of the so-called 'technobabble' (pseudoscientific terminology) used in works of science fiction, as well as on the translation challenges presented by the need to convey such terminology into Ukrainian. The main objective of this study was to analyze any specific lexical features observed in 'technobabble' terms and to establish the extent of challenge they pose for translators when rendered from English into Ukrainian.

'Technobabble' is one of the fascinating features of science fiction, allowing the author to make their imaginary world more realistic and accessible for the reader/viewer. For source material, dialogue from science fiction films and television series has been chosen to illustrate the complex role 'technobabble' plays in making a fictional world believable.

Although the phenomenon itself is not new, pseudoscientific terminology remains a potentially prospective object of studies, given that it possesses special lexical features that make it indistinguishable from actual scientific terms and at the same time provides a challenge for translators due to structural and semantic differences in the English original 'technobabble' and its Ukrainian equivalents. This study analyzes both the structural complexities of pseudoscientific terms in science fiction and the various ways of conveying them in the process of

translation, as well as necessary changes and losses that inevitably follow their rendering into Ukrainian.

**Theoretical background.** The academic background for this study includes papers by both Ukrainian and foreign authors focused on the following problems: the definition of 'technobabble' as pseudoscientific terminology (Barry, 1991; Vilkhovchenko, 2015; Pavlova, 2008; Selihei, 2006); the attempts at classifying 'technobabble' in science fiction based on lexical and semantic criteria (Lysenko, 2002); the special application of pseudoscientific terminology in works of science fiction (Voitenko, 2011; Hlinka, 2010; Fadieieva et al., 2012; May, 2016); the challenge 'technobabble' poses for translators (Caron, 2003; Kovtun, 2014; Voronova, 2011; Wozniak, 2014).

**Methods.** In order to analyze the lexical features of pseudoscientific terms in science fiction ('technobabble') as well as define the translation challenges posed by them, research methodology consisting of several stages has been applied, namely the initial stage involved sampling the source material, specifically 100 examples of both single-word and word-combination 'technobabble'. The data was collected from the dialogue in science fiction films and television series, namely *Back to the Future, Blade Runner, Doctor Who, The Hitchhiker's Guide to the Galaxy, Stargate SG-1, Star Trek Voyager* and *Torchwood*. The criteria used in sampling the source material was as follows: all the examples had the structure and semantics of scientific terms; however, they were used to describe a fictional reality. For the research itself, methods of lexical and structural analysis have been used, as well as translation analysis. In the final stage, the statistical method provided the frequency results for using various translation transformations.

**Results and discussion.** There are multiple ways to denote the phenomenon of 'technobabble' in linguistics: pseudo-scientific terms, quasi-terms, terminoids, etc. (Lysenko, 2002, p.50). According to O. I. Pavlova, pseudoscientific terms are special lexemes that name hypothetical or false concepts that do not correspond to reality (Pavlova, 2008, p.51). P. O. Selihei uses the term "scientific jargon" to describe the pseudoscientific style (Selihei, 2006, p.4).

One of the key features of pseudo-scientific style is the tendency to avoid 'common' words and use 'highbrow' vocabulary, i.e. pseudo-scientific terms, instead. As a result, pseudo-scientific texts may be filled with odd expressions such as *inter-paradigmatic character, ambivalent archetype, creative-generative value, dynamic-constructive phenomenon, immanently determined constructiveness, asymmetric structural-accumulative interaction*, etc (Selihei, 2006). In addition, a

pseudoscientific text is characterized by verbosity, or, simply, wordiness. Thus, an object, action, or situation that can be described concisely is expressed in three or even four words, e.g.: *to prevail — to occupy a dominant position, to regulate — to perform regulatory functions, to impede — to be the cause of difficulties.*

Thus, the key feature of a text that uses pseudoscientific terminology is that it underperforms its communicative function, i.e., is not intended to be understood. Purposeful obscuring of meaning is one of the reasons for the emergence and use of pseudoscientific terminology.

However, in works of fiction (especially science fiction) which are the source of this paper's research material, pseudo-terms play a completely different role. In science fiction, pseudoscientific words and word combinations (the so-called 'technobabble') are used or coined specifically to show the reader or viewer an imaginary reality. They serve as building blocks for making the fantastic world, the setting of a science fiction plot, believable (Lysenko, 2002). Such vocabulary frees the author from the laws of the real world and allows them to avoid the need to explain how certain situations could have happened in reality. The most well-known examples of this use of 'technobabble' are the pseudo-terms *warp drive* and *hyperdrive*, which are often used in science fiction works such as *Star Trek* and *Star Wars* to refer to an engine that allows you to move faster than light or straight through 'folded' space (or even time).

'Technobabble' terms share some of the same features as neologisms (Lysenko, 2002). Just like neologisms, such pseudo-terms are marked by novelty and perform a similar function, naming a certain subject or indicate a relevant characteristic. In a work of fiction, 'technobabble' terms are introduced by the author and perceived by the reader or viewer as real. Pseudo-terms, like actual terms, are words or phrases whose main feature is its correlation with a certain concept (Lysenko, 2002).

Thus, 'technobabble' used in science fiction lacks the main features of a terminological unit (i.e., denoting something describing the real world), but at the same time they function fully as terms and are perceived by the reader or viewer in this way. 'Technobabble' usually follows the secondary stylistic features inherent in real terminology:

- Thematically, it belongs to the fields of science and/or technology;

- It is created on the basis of international Greek and Latin morphemes. For example, 'technobabble' terms use prefixes such as *extra-, hyper-, anti-, sub-, trans-, intra-, tri-, suffixes -tron, -tronic, -ic, -ator, -ion, -metric*, etc.;

- 'Technobabble' terms are predominantly stable word combinations.

It is these secondary features, combined or separate, that provide the necessary imitation of actual terms in a science fiction text (Lysenko, 2002).

Viewed from the angle of neologism/occasionalism (Fadieieva et al, 2012, pp.106-113), 'technobabble' pseudo-terms share the following features:

- Universality: invented words are common for many works of fiction, sometimes unrelated to the plot. For example, pseudo-terms such as *hyperdrive* and *warp drive* have long been used by authors in many science fiction works;

- Compatibility of 'technobabble' with commonly used words and word combinations, interwoven into the structure of the text. For example, the pseudo-term *temporal flux* (i.e. time change) in the *Star Trek: Voyager* television series is combined with verbs (*to show a temporal flux*), adjectives (*a temporary temporal flux*) and prepositions (*due to a temporal flux*);

- Propensity for derivation and combination (*space – subspace – subspatial, flux – flux dispersion – gravimetric flux density*), etc.

All pseudoscientific terms can be divided into certain semantic classes of words (Fadieieva et al, 2012): 1) names of objects, devices or apparatuses: *dematerialization circuit, hyperdrive, anti-polar field*, etc.; 2) names of processes: *to triplicate flammability, a temporal flux, a cellular reconstruction*, etc.; 3) names of particles, substances: *warp particles, differentially charged polar ions, a chroniton-infused serum*, etc.

Structurally, pseudoscientific 'technobabble' terms are either <u>single words</u> or <u>word combinations</u>. Consequenly 'technobabble' terms expressed with word combinations may be classified into <u>two-part</u>, <u>three-part</u> (may include prepositions) and <u>multi-part</u> combinations (with four or more components); see *Table 1*.

*Table 1*. Examples of structural diversity of 'technobabble' terms

| Single words | Word combinations | | |
|---|---|---|---|
| | two-part | three-part | multi-part |
| *emanator* *depolarize* *tricorder* *hyperspace* *hyperdrive* *gigawatt* *triaxilate* *subspace* *midichlorian* | *teleportation-feed* *subspace field* *sonic device* *tripolymer* *plasma* *fold spacetime* *skeletal lock* *phase inverter* *time circuit* *transwarp* | *polaric ion devices* *extrapolate the genetic material* *annular confinement beam* *phased carrier wave* *temporal transport beacon* *interplex the comm systems* | *differentially charged polaric ions* *reverse the polarity of the neutron flow* *dimensionally transcendental chameleon circuit* *sleep-inducing alpha rhythm generator* *focus a narrow beam of* |

| | *corridor* | | *gravitons* |
|---|---|---|---|

Statistically, science fiction 'technobabble' terms consist predominantly of two parts due to the need for complexity (68.5% of the studied examples), while multi-part combinations are the rarest at 6.7%.

The diversity as well as the defined structural, lexical and semantic features of 'technobabble' makes it a challenge for English-Ukrainian translation, especially considering the morphological discrepancies between the two languages as well as different ways of forming word combinations.

To convey English science-fiction 'technobabble' terms into Ukrainan, translators need to use a variety of transformations, often combining them in an effort to make pseudo-terms look more natural in the target text.

The statistical dispersement of using various translation transformations in conveying 'technobabble' pseudoterms in science fiction from English into Ukrainian is represented with *Fig.1*.
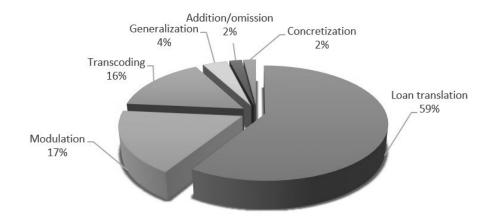


*Figure1.* Frequency of transformations used in the source material

A significant part (16%) of the 'technobabble' terms under consideration have been rendered into Ukrainian by way of transcoding. This transformation, which never involves the semantic side of a lexeme, allows the translator to (mostly) preserve the intended form of the pseudoscientific term and to convey it to the reader/viewer in virtually the same way it was intended in the original.

Examples of transcoding in the English-Ukrainian translation of 'technobabble' terms include the following:

*We've modified our tricorders to detect the fractures and all of us will be wearing one of these. It puts out an anti-polaric field. – Ми налаштували*

*трикордери на пошук тріщин і усі носитимемо ось це. Ці пристрої випромінюють антиполяричне поле* (ST).

*I heard Yoda talking about midichlorians. I've been wondering... What are midichlorians? – Midichlorians are a microscopic life-form that resides within all living cells. – Я чув, як магістр Йода говорив про мідіхлоріани. Розкажіть мені... Що це таке? – Мідіхлоріани – це мікроскопічна життєва форма, що є у кожній живій клітині* (SW).

*Ah, here it is. It's a simple matter of extracting the iconometric elements, and triaxilating a recursion matrix. – Now, why didn't I think of that? – Ось, головна проблема. Витягти іконометричні елементи і триаксилювати рекурсивну матрицю. – І чому я не подумала про це?* (ST).

When transcoding is used, the meaning of the conveyed 'technobabble' terms remains obscure, while at the same time gives the term a more sophisticated pseudo-scientific look. However, such an approach is justified in that the inner meanings of Latin and Greek roots are not necessarily comprehensible to the English reader/viewer, either. However, the translator still preserves the functions of the pseudo-term and its stylistic features, conveying the flavor of science fiction and emphasizing the fantastic and unattainable nature of the concept.

To convey not only the form, but also the meaning of 'technobabble' terms, translators predominantly (59%) use loan translation, finding a fitting equivalent for the English word or word-combination in question.

*One more move and my sonic device will triplicate the flammability of this alcohol. – Ще крок, й мій звуковий пристрій потроїть запальність спирту* (DW).

*This is one of the subspace fractures we've located with a magneton scan of the surface. – Це одна з підпросторових тріщин, які ми виявили за допомогою магнетонного сканування поверхні* (ST).

*There's a neutronic wavefront approaching, class-9. – Class-9? – Uh, "wavefront"? Now, what in the name of God is that? – Наближається нейтронний хвильовий фронт дев'ятого класу. – Дев'ятого? – Хвильовий фронт? Це взагалі що таке?* (ST).

In separate cases (2%) concretization is needed to narrow down the original term, as 'technobabble' terms might have a general meaning that needs to be specified in translation:

*I'm going to try a skeletal lock. – A what? – I think I can get a clean lock on the minerals in their bone tissue. I just came up with it, but I think it might work. –*

*Спробую <u>скелетне наведення</u>. – Що? – Думаю, я зможу навестися на мінерали у кісткових тканинах. Щойно придумала, але впевнена, це спрацює* (ST).

More frequently, pseudoterms may be translated not by narrowing down the meaning of the original units, but by expanding their meaning by way of <u>generalization</u> (4%). Such changes are required due to the need to clarify the meaning of the term to the reader/viewer:

*What about <u>EMS recombination</u>? – We've already tried it. – Як щодо <u>рекомбінації генів</u>? – Ми вже намагалися* (BR).

*If you're as clever as me, then a <u>teleportation-feed</u> can be reversed. – Якщо ти така ж розумна, як я, <u>телепортацію</u> можна здійснити у зворотньому напрямку* (DW).

*It's the Stargate on the other side that actually reintegrates the matter into its <u>pre-organised form</u>. – Зоряна брама на іншій стороні реінтегрує речовину в її <u>організовану форму</u>* (SG).

*The new <u>time-circuit control tubes</u> are warmed up. – Новий <u>контролер</u> функціонує прекрасно. <u>Часові контури</u> увімкнено* (BF).

Since the use of generalization can lead to a certain loss of information, it should be used with caution, only when the use of the dictionary equivalent of the translated word in translation can lead to a violation of the grammatical or stylistic norms of the Ukrainian language. In addition, through generalization, it is possible to offer easier equivalents for pseudo-terms, but it is important not to forget that there should always be a line between understanding the concept and its fantasticness.

Quite frequently (17%) <u>modulation</u> is needed to convey the meaning of pseudoscientific terms in science fiction, by way of logical development of the original meaning while staying in the same semantic field:

*Did it work? – I think it might have. – How do you know? – Because <u>the bulk beings</u> are closing a tesseract. – Ну що, вийшло? – Цілком ймовірно. – Звідки ти знаєш? – Тому що <u>вищі створіння</u> закривають тессеракт* (TR).

*The <u>Infinite Improbability Drive</u> is a new method of crossing vast interstellar distances without all that tedious mucking about in hyperspace. – <u>Міжгалактична система малоймовірності</u> – чудовий новий спосіб подолати міжзоряні відстані за кілька секунд без зусиль і часу, витрачених на стрибки у гіперкосмос* (HG).

*Your central nervous system is showing <u>a temporal flux</u>, but it's rapidly returning to normal. – Ваша центральна нервова система показує <u>зміну часу</u>, але вже швидко нормалізується* (ST).

With certain frequency (2%), translators may use <u>addition</u> or <u>omission</u> in conveying 'technobabble' terms. Addition often goes along with concretization and serves to specify and clarify the original term to the Ukrainian reader/viewer:

*Fortunately, I was able to create a chroniton-infused serum that brought you back into <u>temporal alignment</u>. – На щастя, я зумів створити насичену хронотронами сироватку, яка повернула вас у <u>нормальний темпоральний потік</u>* (ST).

Omission may be needed to avoid verbosity, but it should be used with caution, as omitting parts of 'technobabble' word combinations may lead to loss of meaning:

*That thing, is it trapped for good on video? – Hope so. But just to be on the safe side though, I'll use my unrivalled knowledge of trans-temporal extrapolation methods <u>to neutralise the residual electronic pattern.</u> – You'll what? – I'm gonna tape over it. – Ця істота надійно замкнена на відео? – Сподіваюсь. Та задля більшої безпеки задію свої неперевершені знання трансемпоральних екстрипаційних методів. – Що? – Запишу щось на неї* (DW).

*Narrow <u>the annular confinement beam</u>. – Tractor beam's almost gone, Captain. We're losing this tug of war. – Зменшіть кут <u>стримуючого променя</u>. – Тяговий промінь майже зник, капітане. Нам бракує потужності* (ST).

Finally, in specific cases (less than 1%), <u>grammatical replacement</u> may be needed:

*Stand by. The inputs have locked. We've got to flush the plasma injectors. – Or maybe it's just <u>a phase synchronisation adjustment</u>. – Перевіряю. Команди заблоковані. Треба продути плазмові інжектори. Або <u>відрегулювати синхронізацію фази</u>* (ST). In this example, a noun included in a three-component pseudoscientific term (*adjustment*) has been conveyed as a verb (*відрегулювати*).

**Conclusions.** 'Technobabble', or pseudoscientific terminology used in science fiction, is a complex linguistic phenomenon possessing special linguistic features. The analysis of the source material proves that pseudoscientific terms do, in fact, resemble actual scientific terms both in form and meaning, the only difference between them being that 'technobabble' terms describe an imagined (fictional) reality. A thorough structural analysis allows us to classify 'technobabble' into several sub-types, such as single-word terms and word

combinations, which, in their turn, branch into two-part, three-part and multi-part examples. Translation-wise, pseudoscientific terms have proven to pose a challenge, as conveying them into Ukrainian requires significant changes, predetermined both by form (transcoding) and by meaning (loan translation, concretization, generalization, modulation, etc.). Translation analysis has established that for 'technobabble terms', the most frequent technique used is loan translation, which falls in line with rules applied to translating actual scientific terms. Even with limited source material, it is evident that the object of this study shows potential for further research both in the fields of lexical semantics and translation studies.

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