

UDC 81'42

DOI <https://doi.org/10.32782/2522-4077-2026-216-4>

SPACE, TIME, CHARACTER AS A MODEL FOR ANALYSING COGNITIVE ESTRANGEMENT IN SCIENCE FICTION

SPACE, TIME, CHARACTER ЯК МОДЕЛЬ АНАЛІЗУ КОГНІТИВНОГО ОЧУДНЕННЯ У НАУКОВІЙ ФАНТАСТИЦІ

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This article analyzes the technique of estrangement and its role in science fiction. It traces the evolution of the concept from Viktor Shklovsky's early ideas to the philosophical, linguistic, and socially oriented interpretations of the 20th century, as well as contemporary approaches to the "strange" in literature. Particular attention is paid to the works of Darko Suvin and Simon Spiegel, who describe science fiction as a genre that balances the effect of novelty with the necessity of making the fictional world intelligible and logical for the reader.

The article demonstrates that estrangement in science fiction primarily functions at the generic level, whereas within a specific text, unusual elements are typically presented as part of everyday reality, helping the reader navigate alternative worlds.

The scientific novelty of this work lies in situating the Ukrainian tradition of literary studies within a broad international context. Ukrainian approaches are presented not as a secondary reflection of Western theories, but as an independent direction that offers a fresh perspective on estrangement, informed by specific historical and cultural experiences. The study conceptualizes estrangement as a fluid process in which the effect of unfamiliarity is gradually balanced by habituation and the acceptance of a "new norm."

The paper proposes the Space / Time / Character analytical model as an effective tool for examining science fiction texts. This model allows tracing how the effects of estrangement and the processes of adaptation are distributed across the types of fantastic assumptions (the *novum*). Applying this model to the works of Ursula K. Le Guin and Margaret Atwood reveals that changes related to space and time are more readily accepted as a new norm. In contrast, *nova*, key fantastic elements that define the foundation of the quasi-real world and affect human identity, retain the sense of strangeness longer and require a more lucid and restrained narrative style. The article concludes that science fiction is a unique form of artistic knowledge, in which estrangement continues to play a vital role in understanding the reality of the modern technological world.

Key words: estrangement, cognitive estrangement, science fiction, *novum*, space, time, character.

Статтю присвячено аналізу прийому очуднення / остраниння та його ролі в науковій фантастиці. Розглядається процес формування та трансформації цього поняття: від ранніх ідей В. Шкловського до філософських, лінгвістичних та соціально орієнтованих інтерпретацій ХХ століття й сучасних підходів до розуміння «дивного» в літературі. Особливу увагу приділено працям Д. Сувіна та С. Шпігеля, у яких наукова фантастика описується як жанр, що поєднує ефект новизни з необхідністю конструювання вигаданого світу як зрозумілого та логічного для читача. У статті доведено, що очуднення в науковій фантастиці найчастіше функціонує на рівні жанру в цілому, тоді як у межах конкретного тексту незвичні елементи зазвичай подаються як частина повсякденної реальності, що допомагає читачеві орієнтуватися в альтернативних світах.

Наукова новизна роботи полягає в тому, що українська традиція літературознавчих досліджень розглядається в широкому міжнародному контексті. Українські підходи показано не як вторинне відображення західних теорій, а як самостійний напрям, що дає змогу по-новому поглянути на остраниння з урахуванням історичного та культурного досвіду. У статті чуднення трактується як рухливий процес, у якому ефект незвичності поступово врівноважується звичаєм та прийняттям нової норми.

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У роботі запропоновано аналітичну модель *Space / Time / Character* як зручний інструмент для аналізу науково-фантастичного тексту, що дає змогу простежити розподіл ефекту очуднення та процесів адаптації до незвичного залежно від типу фантастичного припущення. Застосування моделі до творів Урсули Ле Гуїн та Маргарет Етвуд демонструє, що зміни, пов'язані з простором і часом, швидше сприймаються як нова норма, тоді як новими, ключові фантастичні елементи, що визначають основу квазіреального світу й торкаються людини та її ідентичності, довше зберігають відчуття незвичності та потребують більш ясного і стриманого нарративу. У статті зроблено висновок про те, що наукова фантастика постає особливою формою художнього пізнання, у якій очуднення продовжує відігравати важливу роль у сприйнятті реальності сучасного технологічного світу.

Ключові слова: остраниня, когнітивне остраниня, наукова фантастика, новум, space, time, character.

Problem Statement. The genesis and evolution of the concept of estrangement constitute one of the key trajectories in 20th and 21st-century literary theory. Originating as a term in the Russian Formalist school, estrangement has gradually moved beyond its local methodological context, becoming a universal aesthetic and cognitive category applicable to the analysis of both literary form and the mechanisms of perception. This concept acquires particular significance in the theoretical description of science fiction, where the effect of "otherness" becomes not merely a stylistic option, but a structural condition of the genre.

Analysis of Recent Research and Publications. The theoretical foundation for the study of estrangement was established by the Russian Formalist school, primarily in the works of Viktor Shklovsky, who defined *ostranenie* as a fundamental artistic device [1]. In the second half of the 20th century, Darko Suvin radically reinterpreted this concept in the field of science fiction studies. His theory of "cognitive estrangement" remains the dominant paradigm for defining science fiction as a distinct literary genre [2].

Contemporary scholarship has further expanded these boundaries. Notably, Simon Spiegel has introduced the concept of "naturalization," shifting the focus to how the strange is integrated into the narrative's logical structure [3]. In the Ukrainian academic tradition, the problem of estrangement has been explored through various lenses – from linguistic and stylistic approaches to broader cultural and philosophical syntheses (as seen in the research of O. Potebnia, T. Denysova, N. Slukhai) in the research of Tetiana Riazantseva [4], who examines intertextual transformations, and Tetiana Grebeniuk [5], whose work focuses on the narratological structures of fantastic literature. However, the integration of these regional perspectives into a unified analytical model that accounts for the categories of *Space, Time, and Character* remains an underexplored area of research.

The aim of this article is to provide a systematic comparison of Western models of cognitive estrangement (Darko Suvin) and the naturalization of the strange (Simon Spiegel) with the Ukrainian literary tradition of estrangement research. Furthermore, the study proposes an instrumental framework for analyzing science fiction texts based on three core parameters: *Space, Time, and Character*. This model allows mapping the distribution of estrangement and naturalization at the level of specific artistic realities.

The scientific novelty of the article lies in the fact that the Ukrainian tradition of studying estrangement is treated not as a secondary reflection of Western theories, but as an independent academic direction. This approach expands the Suvinian-Spiegelian theoretical framework by integrating aspects of cultural self-determination and postcolonial experience, both shaped by conditions of political and symbolic inequality. Furthermore, the paper establishes an original conceptualization of estrangement as a fluid mechanism emerging between cognitive rupture and narrative stabilization. To analyze this tension within the science fiction genre, the author proposes the *Space / Time / Character* analytical model.

Presentation of the Core Material. The concept of estrangement (*ostranenie*) entered scientific discourse through Viktor Shklovsky's seminal essay "Art as Device" (1917), where it denotes the fundamental mechanism of artistry: art restores the "vision" of an object by shattering habitual

recognition [1, p. 12]. For V. Shklovsky, habitual perception is not a neutral psychological state but a risk of losing a vital connection with the world: one ceases to *see* the world and merely begins to *recognize* it by general attributes [1, p. 13]. Artistic form, conversely, disrupts the customary flow of perception, prolonging and deepening the experience.

This position emerged in polemic with O. Potebnia, who associated art with "thinking in images" and understood the image as a means of explaining the unknown through the known. In Formalist logic, the artistic image functions differently: it does not facilitate understanding but complicates it, thereby intensifying the reader's experience. Within this framework, the entire referential situation of the artwork is reinterpreted; aesthetic value arises not from the simplification of perception, but from the necessity to think and perceive the representation of non-standard events with greater tension.

Despite the fact that representatives of the Formalist school often emphasized their detachment from philosophical psychology, the theory of estrangement reveals persistent links to the philosophical tradition. V. Shklovsky himself associated the effect of the unusual with the ancient concept of wonder (*admiratio*). In later interpretations, estrangement draws closer to the phenomenological attitude of "to the things themselves": much like phenomenological reduction suspends habitual interpretations, estrangement disrupts established modes of understanding and restores to the object a sense of its immediate presence.

Further development of the concept involved a shift from a mechanistic "totality of elements" to a systemic linguistic analysis. Roman Jakobson and the Prague Linguistic Circle interpreted estrangement through the theory of *foregrounding*, in which textual elements are highlighted by deviating from the "background norm" [6, p. 70–71]. In this model, estrangement evolves from an isolated device into a systemic principle of message organization.

In the next stage, this principle was elevated to the level of genre, a shift most fully reflected in Darko Suvin's theory. In *Metamorphoses of Science Fiction* (1979), science fiction is defined as the literature of *cognitive estrangement*. Here, the genre functions as a synthesis of two forces: estrangement creates a distance between the reader and the text, while cognition provides the internal logic of the world, transforming the work into a thought experiment based on the "what if?" principle [2].

The central concept of the Suvinian model is the *novum*: a "strange newness" or fantastic assumption that radically transforms the familiar environment. It is a qualitatively distinct innovation, absent from empirical reality, which fundamentally alters the depicted world. A *novum* may be technological, biological, social, or epistemological; however, its defining characteristic is cognitive validity. It must be explainable within a rational discourse, even if the explanation remains hypothetical. Consequently, science fiction is inherently historical: it presents norms and institutions as mutable constructs rather than sacred absolutes, thereby functioning as a diagnostic tool for the present.

It should be noted that in Suvin's model, estrangement is established primarily at the level of genre and world-building through the introduction of the *novum* as the fundamental organizing element of an alternative reality. However, for a comprehensive analysis of a science fiction text, it is crucial to consider not only the presence of the *novum* but also its realization within specific narrative forms. It is at this level – the level of language and textual organization – that contemporary linguostylistic research allows for a more precise understanding of how estrangement functions within the literary work.

Expanding upon this theoretical foundation, Alexandra Berlina draws on Guy Cook's classification to propose a multi-level model of estrangement encompassing *sensory perception, textual structure, and linguistic form*. This systemic analysis suggests that in science fiction, the effect of strangeness often shifts from surface-level stylistic devices to the ontological foundations of the depicted world [7].

This position is further developed by Simon Spiegel in *Things Made Strange*, who offers a refinement of the Suvinian model. S. Spiegel observes that while estrangement functions at the generic level, the internal mechanics of the text often rely on the naturalization of the strange. Fantastic ele-

ments are introduced as self-evident; characters react to them pragmatically, and pseudo-scientific explanations render the unusual logical [2]. Consequently, estrangement shifts from the stylistic to the ontological level: the strangeness lies not in *how* the text is written, but in *what* constitutes its quasi-reality.

In the interpretation of Simon Spiege, estrangement is primarily an internal mechanism of the fictional world that manages the distribution of reality and unreality within the text itself. However, the further evolution of the theory suggests that this mechanism can be understood beyond the realm of poetics, within a broader cultural and historical context. It is in this direction that the Ukrainian academic tradition unfolds, shifting the focus from the analysis of artistic form to the processes of meaning-making during periods of cultural change. In Tetiana Riazantseva's research, estrangement is viewed as a means of transcending habitual perceptual frameworks during shifts in normative systems, where the effect of the unusual is used to re-evaluate meanings and renew perceptions of reality [4].

Tetiana Grebeniuk's research on Ukrainian science fiction of the 1920s demonstrates that estrangement can liberate perception from imposed interpretations [5]. Under conditions of political and cultural inequality, the conception of what is considered "normal" is often shaped from the outside. In such a context, estrangement targets not only specific depicted objects but the very mechanisms of establishing the norm through language, institutions, and historical interpretations. From this perspective, the Ukrainian approach expands the Suvinian model: the fantastic assumption acquires significance linked to cultural identity, and its persuasiveness relies not only on scientific explanation but also on collective memory and historical experience.

The above points align with Simon Spiegel's logic regarding the naturalization of the strange. However, the Ukrainian school raises the question not only of *how* the strange is naturalized within a text, but also *what* exactly is being naturalized, *by whom*, and in *whose interests*. Naturalization can be seen not merely as a neutral poetic procedure, but as a form of ideological pressure. In this context, estrangement functions as an intellectual strategy of resistance against such impositions.

In our view, the connection between Suvin's understanding of cognitive estrangement and Spiegel's concept of the naturalization of the strange can be demonstrated through the analytical approach proposed in the dissertation research by G. O. Oleinikova, which examines the science fiction text through the components of *Space, Time, and Character* [8].

This model allows us to pinpoint which "node" of the "other-world" is activated by the novum (spatial, temporal, or character-based) and to track how estrangement and naturalization are distributed across the levels of the text.

Alterations related to *Time and Space* are generally more susceptible to rational explanation and are more quickly perceived as the new norm of the fictional world. Conversely, novums affecting *Characters* and modes of cognition tend to retain the sensation of unfamiliarity longer, as they touch upon fundamental conceptions of identity, language, and the limits of understanding.

The works of Ursula K. Le Guin offer a particularly clear demonstration of the relationship between the novelty of a fantastic assumption and its gradual assimilation within the text. In the novel *The Left Hand of Darkness* [9], the anthropological premises of androgyny and kemmering create a profound sense of estrangement. Within the *Space / Time / Character* framework, this novum functions as follows:

Character: The primary node of estrangement is localized in the physiology and psychology of the Gethenians. The merging of male and female traits radically alters the character's structure, making them a vessel for a non-human experience that resists the reader's initial identification.

Space: The effect of strangeness is systematically softened (naturalized) through the detailed depiction of the harsh climate of the planet Winter. The ethnographic narrative style presents the protagonists' physiology as a natural adaptation to the frozen environment, rendering biology a logical extension of geography.

Time: The temporal cycle of *kemmering* introduces a rhythmic quality to societal life, transforming biological "strangeness" into a predictable, calendar-based process. This turns the deviation into a stable norm that organizes social time.

This process of naturalization is explicitly reflected in the author's own meta-commentary. Discussing the linguistic challenges of depicting an androgynous society, Le Guin noted:

"The use of the pronoun 'he' was regrettable but unavoidable" [10, p. 168].

By openly acknowledging the inadequacy of gendered language, the text rationalizes the 'missing' linguistic tools, integrating this deficit into the narrative structure. Within the *Space / Time / Character* model, this example primarily concerns the *Character* component, as the novum affects the core of bodily identity. This case demonstrates the maximum degree of assimilation: even the inability to find precise terms does not disrupt the narrative but becomes an integral part of it through authorial reflection. This linguistic limitation is transformed into a tool for *naturalization*. Consequently, radical alterity is not stylistically emphasized but rather stabilized through a restrained, analytical delivery, establishing the Gethenians' reality as a stable norm within the constraints of human discourse.

In the novel *The Dispossessed* [11], the socio-political novum, an anarchist societal organization, is presented through descriptive and explanatory forms, portraying the alternative order as an everyday reality. Within our analytical framework, this is manifested across several levels:

Space: The detailed depiction of the desert planet Anarres naturalizes the absence of private property through harsh environmental conditions, where collectivism becomes the only viable logic for survival.

Time: The dual-timeline narrative structure (alternating chapters between past and present) creates an effect of estrangement by clashing the protagonist's perception with two distinct social systems at different stages of his life.

Character: The protagonist, Shevek, serves as a vessel for an alternative mindset. Through his "outsider's gaze," our familiar world (the planet Urras) is estranged: institutions of property and power that we take for granted appear to him as strange and irrational.

"There was no lawgiver, no central authority, no government" [11, p. 34].

While Le Guin uses naturalization to bridge the gap between the reader and the "other," Margaret Atwood employs it to create a chilling moral distance.

Within the body of Margaret Atwood's work, the process of naturalizing the strange often reaches a critical threshold, transforming into a source of so-called «*reverse estrangement*» (or *inverse defamiliarization*). The reader experiences alienation precisely because the characters do not perceive the events as anomalous. In the novel *Oryx and Crake* [12], the biotechnological novum is described in an utterly mundane, pragmatic manner:

"It was standard procedure. Everyone knew about it" [12, p. 74].

Within the *Space / Time / Character* analytical model, this example relates primarily to the *Time* component. Here, the novum functions not as a sudden rupture with the present, but as the result of a gradual, historically continuous evolution of technological practices. The biotechnological alterity is embedded in the everyday temporal continuum of the novel's world and is perceived by the characters as an already established norm.

Such a tone renders radical biotechnological changes within the fictional world entirely familiar; however, it simultaneously evokes a sense of profound anxiety in the reader. The future is perceived not as fundamentally "other," but as an all-too-logical and consistent extension of the present. Thus, the fantastic assumption performs a diagnostic function, exposing and bearing the latent tendencies of modernity.

A similar mechanism operates in *The Handmaid's Tale* [13], where the socio-legal premise, the establishment of a theocratic regime, is presented not as a sudden collapse of order, but as the result of gradual and ostensibly rational changes:

"Nothing changes instantaneously: in a gradually heating bathtub you'd be boiled to death before you knew it" [13, p. 173].

Within the *Space/Time/Character* analytical model, this example primarily relates to the *Time* component. The novum is realized as the result of cumulative, historically continuous shifts rather than an instantaneous ontological rupture. The social transformation unfolds in such a way that the loss of the former norm becomes apparent only in retrospect.

The metaphor of the "heating bathtub" functions as a cognitive commentary on the mechanism of naturalization: estrangement arises at the level of the reader's awareness of the irreversibility of these gradual changes, while within the fictional world, the events maintain the status of a rationally explainable and "natural" situation.

The proposed approach allows us to view the science fiction text as a balanced system where the disruption of familiar concepts (estrangement) is counterpoised by their temporal ordering (*naturalization*). Analyzing the works of Ursula K. Le Guin and Margaret Atwood through the lens of the *Space / Time / Character* components reveals *three stable patterns* in the functioning of cognitive estrangement.

1. *Dependence of Naturalization on the Dominant Component*

The first pattern indicates that the degree of assimilation of the unusual directly depends on which aspect of the "other-world" the novum activates. When changes are localized within the categories of *Space* or *Time*, the mechanisms of rational stabilization operate more rapidly. Spatial and temporal shifts are more easily explained through a "quasi-scientific" framework, quickly becoming the mundane background of the narrative action.

Conversely, a novum that activates the *Character* component, particularly in an anthropological form, retains its effect of strangeness longer. It touches upon core cognitive categories of identity and language rather than the external coordinates of the world. This is clearly demonstrated in Le Guin's work: in *The Left Hand of Darkness* (an anthropological novum), the estrangement remains radical, whereas in *The Dispossessed*, the socio-political novum (the *Space* component) is naturalized through a restrained, "documentary" narrative style. The absence of property in the latter is presented as a natural form of life, thereby stabilizing the unreal world for the reader.

2. *Naturalization as a Source of "Reverse Estrangement"*

The second pattern concerns a functional distinction in naturalization: it can either facilitate immersion into the world or become a source of "reverse estrangement." In the works of Margaret Atwood, this effect reaches its limit. In the novel *Oryx and Crake*, biotechnological horrors are presented as commonplace practices that evoke no surprise from the characters.

It is precisely this emphasized mundanity that generates a sense of profound anxiety in the reader. The tension arises not from a lack of logic, but from its excessive persuasiveness: the future appears not as a fantastic rupture, but as a logical extension of the present. In *The Handmaid's Tale*, the *Time* component plays the leading role. The social catastrophe unfolds as a chain of small, rationally justified steps. Here, estrangement arises through the effect of "retrospective shock": the reader realizes the magnitude of the changes precisely because they were fully naturalized within the text.

3. *Rational Justification and the Diagnostic Function*

The third pattern relates the type of novum to the method of its internal explanation. While Darko Suvin posits that the novum must be rationally grounded, our analysis shows that this justification serves different purposes. In Le Guin's work, rationality constructs a cohesive social model through language and ethics. In Atwood's work, persuasiveness is built upon proximity to contemporary reality: it is not the technologies themselves that appear logical, but the social mechanisms of their adoption. The closer a fantastic assumption is to the practices of the present, the more easily it is naturalized within the text, and the more intensely the effect of estrangement is transferred to the reader's perception, performing a diagnostic function.

The application of the *Space / Time / Character* model confirms that estrangement and naturalization are not opposing poles but an interconnected mechanism. Estrangement creates distance and the effect of novelty, while naturalization ensures the stability of the fictional world. The nature of their

interaction is determined by the dominant component: spatial and temporal changes are more quickly transformed into a "new norm," whereas novums involving the transformation of the *Human (Character)* require the deepest naturalization to maintain a cognitive connection with the reader.

Conclusions. This study demonstrates that estrangement in science fiction has evolved from a formalist device into a structural cognitive category. Expanding upon the concepts of D. Suvin and S. Spiegel, we argue that the genre functions not through continuous rupture, but as a system of managed tension between cognitive estrangement and narrative stabilization.

The proposed *Space / Time / Character* analytical model reveals that strategies for assimilating the unreal depend on the type of novum:

- *Space*: Social and spatial shifts are naturalized through descriptive presentation as a "new norm."
- *Time*: Temporal shifts emphasize historical continuity.
- *Character*: Anthropological assumptions require restrained narration and linguistic reflection.

We conclude that the more radical the unreality of the depicted world, the greater the need for a stable narrative form to facilitate reader cognition. Ultimately, science fiction serves as a unique mode of artistic knowledge, making the "other" accessible for reflection and functioning as a vital tool for the critical analysis of contemporary reality.

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Дата першого надходження статті до видання: 20.01.2026

Дата прийняття статті до друку після рецензування: 16.02.2026

Дата публікації (оприлюднення) статті: 14.04.2026