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Anti-marxist polemics in Mykola Rudenko's novel-treatise "Formula of the Sun"

Антимарксистська полеміка в романі-трактаті Миколи Руденка «Формула Сонця»

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Abstract


The research conducted by the Sumy branch of the Serhii Podolynskyi Scientific Society delves into the distinctive artistic legacy of the renowned Ukrainian writer Mykola Rudenko. This study sheds light on Rudenko's integration of ideas from the Ukrainian school of physical economy, which stood in stark contrast to Karl Marx's political economy. Mykola Rudenko, known for his literary prowess, often employed his fictional works to propagate his scientific, economic, and philosophical theories. The treatise "Formula of the Sun", despite its limited recognition in 20th-century Ukrainian literature, holds a distinct place deserving comprehensive exploration. This novel not only showcases Rudenko's literary craftsmanship but also provides a platform for dissecting the literary discourse of the time. Through a combination of structural, narrative, and polemical elements, Rudenko articulates his worldview within the framework of physical economy. This study endeavors to elucidate the evolution of physical economy as a counterbalance to Marxian


Анотація

Представлено результати літературознавчого дослідження членів Сумського осередку Наукового товариства імені Сергія Подолинського, що має на меті розкрити унікальність художнього доробку видатного українського письменника Миколи Руденка і на цій основі ознайомити із ідеями представників української школи фізичної економії (С. Подолинський, В.Вернадський, К. Тімірязєв, О. Чижевський, М. Руденко), яка була антагонічним вченням до політекономії Карла Маркса. Оскільки Микола Руденко був видатним українським письменником і водночас розвивав ідеї фізичної економії, він досить часто використовував свої художні твори для популяризації власних наукових, економічних, філософських гіпотез та досліджень. Оскільки в українській літературі ХХ ст. трактат не здобув широкої популярності, «Формула Сонця» Миколи Руденка набуває унікальності й заслуговує на глибоке вивчення з ряду причин: з літературознавчого погляду (структура, сюжет,

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economics and to analyze its impact on Rudenko's prose, as evidenced by "Formula of the Sun". Employing methodologies ranging from analysis and synthesis to a systematic and hermeneutic approach, the research aims to unravel the intricate interplay between literature and economic theory in Rudenko's work.

Keywords: Karl Marx, Mykola Rudenko, political economy, novel-treatise, physical economy.

Introduction

Mykola Rudenko is known to the world primarily as a Ukrainian poet and prose writer, public person, and founder of the Ukrainian Helsinki Group, the first legal organization in the totalitarian USSR to fight against human rights violations. "The creation of the group is connected with the signing by the Soviet government of the Helsinki Agreements, which became the Final Act of the Conference on Security and Cooperation in Europe" (Stus Center, (s.f)). Today, there is a significant number of scholarly works and publications covering the human rights activities of Mykola Rudenko. As for the literary heritage of the artist, researchers are primarily interested in his poetry, ignoring works that highlight the ideas of physical economy. Therefore Mykola Rudenko's poetry and prose, and his human rights activities, have been analyzed, described and documented in detail, and works on the problems of physical economy need to be properly studied. The writer's work in the field of physical economy, his model of the architecture of the universe, and the atypical and unique parallel presentation of the author's scientific research in his own works of fiction remain poorly studied, making the writer's artistic heritage a platform for disseminating the ideas of the Ukrainian scientific school of physical economy, founded by Rudenko. The ideas of the representatives of the Ukrainian school of physical economy are a completely avant-garde phenomenon and have not been studied in world science. Among the most prominent representatives of the Ukrainian school of physical economy are Podolynskyi S., Vernadskyi V. and Rudenko M.: "As for the Ukrainian school of physical economy, it should be emphasized that S. Podolynskyi founded it, V.

полеміка) та з точки зору вивчення українського літературного дискурсу ХХ ст., що змусили видатного українського письменника вступати у полеміку у художньому романі, щоб викласти свою світоглядну позицію. Мета дослідження – показати розвиток фізичної економії як альтернативи політекономії Карла Маркса, розкрити, як це позначилося на прозі письменника на прикладі роману-трактату «Формула Сонця». У дослідженні використано загальнонаукові (аналіз, синтез і порівняння) та літературознавчі методи (системний підхід, герменевтичний та ін.).

Ключові слова: Карл Маркс, Микола Руденко, політична економія, роман-трактат, фізична економія.

Vernadskyi made an important step in its development, and M. Rudenko developed their ideas, outlined the theoretical foundations of the school, defined it, and formulated the physical economy of the universe" (Vorobiova, 2019, p. 90). The ideas of Ukrainian scientists were far ahead of their time and are of interest for modern studies. We made the first attempt at a detailed analysis of Mykola Rudenko's novel, in which the author presented his scientific hypothesis.

Theoretical framework

Since the creative heritage of Mykola Rudenko reflects an entire era and includes a whole palette of literary genres, it has been studied by more than one generation of scholars and literary critics. We see three separate vectors of research into the works and activities of Mykola Rudenko: 1) fiction; 2) scientific works; 3) public (human rights) activities of the writer. The difficulty of studying the work of Mykola Rudenko lies in the fact that he included serious scientific hypotheses in his fiction. This complicates the research, as it requires the efforts of scholars from various fields of science to create a holistic picture of Mykola Rudenko's worldview. Therefore, today, scholars interested in Mykola Rudenko's work are studying a small part of his works.

The writer's life was studied by I. Vlasenko (Vlasenko, 2007), E.Sverstiuk (Sverstiuk, 2013), and others in order to review the literary and political discourse of the twentieth century and to investigate Mykola Rudenko's contribution to the development of Ukrainian literature. Their works allowed us to understand the spirit of the era and the reasons for the writer's worldview revolution.

A valuable source of studying the writer's life dominants is his memoir novel "Life is the greatest miracle" (Rudenko, 2013), which, in addition to the memoirs of a phenomenal personality, contains appendices containing letters, texts of speeches, and speeches by Rudenko, documents related to the organization of the Ukrainian Helsinki Group, which he created. In our opinion, the most extensive study of Mykola Rudenko's poetry is the work of H. Vivat (Vivat, 2013). H. Vivat analysed Rudenko's poetry and defined science as a characteristic characteristic of the poet's lyrics - 'poesia doctus' (Vivat, 2013). Other researchers have focused on a particular aspect of the work, such as the language issue or elements of ecocriticism in novels.

Scientific works of L. Vorobiova (Vorobiova, 2019), R. Nakonechnyi, A. Kopytko (Nakonechnyi, & Kopytko, 2013) made it possible to study the unique philosophical and economic concept of Rudenko and to comprehend the work of other representatives of the Ukrainian scientific school of physical economy.

Researcher L. Hryniv and her colleagues focused on the development of Ukraine's agricultural sector based on the works of representatives of the Ukrainian school of physical economy (Hryniv, & Nazarkevich, 2014).

The scientific research of these and many other researchers proves the uniqueness of Mykola Rudenko's work and its relevance in addressing the global problems of our time.

Unfortunately, it should be noted that the range of scientific research on M. Rudenko's legacy as a representative of the Ukrainian scientific school of physical economy and his scientific research in the field of cosmology, both during the times of the ban on the writer's and scientist's works and now, have been and remain insufficiently studied and popularised. Understanding that it is necessary to study Mykola Rudenko's work comprehensively in order to reveal the scale of his views, we analysed the novel "Formula of the Sun" not only from a literary point of view, but first of all, we revealed the ideas that the writer tried to convey to the reader in order to solve the global problems of our time.

Methodology

Since until now, Mykola Rudenko's novel 'Formula of the Sun' has not been the subject of research in either literary studies or political science, nor has it been analysed in the context of global issues of our time, we decided to explore its role in both the literary and general civilisational discourse. To achieve the goal of our study, we used general and special research methods. General scientific methods of research (analysis, synthesis, comparison) allow us to assert that so far there have been no attempts to study the novel-treatise by N. Rudenko 'Formula of the Sun' as a platform for popularising the ideas of representatives of the Ukrainian school of physical economy. The analysis of the scientific literature has shown that Mykola Rudenko is indeed a successor of the ideas of Serhiy Podolynskyi and Volodymyr Vernadskyi and is a representative of the school of physical economy. The analysis and synthesis of literary criticism allows us to assert that the authors propose a new approach to the study of Mykola Rudenko's novels - it is necessary to study the writer's works from the point of view of scientific hypotheses presented in the novels. Therefore, the authors have used a systematic approach to the study of the writer's literary and intellectual heritage, because this is the only way to understand the scale of the novel's ideas, since the work contains a political, economic, social and environmental structure that must be studied in unity. The historical-functional method made it possible to study and predict the place and role of the writer's heritage in Ukrainian literary discourse. Since Mykola Rudenko's work covers almost the entire turbulent twentieth century, it was necessary to investigate how the writer became a dissident in the USSR and came to study political economy and develop ideas of physical economy, which, in turn, are in harmony with the ideas of the physiocrats. The historical and genetic method of research was used to study the genesis of Rudenko's works, the prerequisites for the emergence of his ideas, and fundamental changes in the perception and interpretation of the writer's heritage because of changes in public consciousness and the study of the place of his works in the Ukrainian literary process and science. Therefore, the cultural and historical method was applied to study the influences of historicism, biographism and the connection between Mykola Rudenko's novels and scientific works and the environment that influenced their creation. It was found that it was the political situation in the USSR that led to the worldview crisis of the already popular Mykola Rudenko

and led to a reassessment of values in the life of the famous Ukrainian artist. After 1963, Mykola Rudenko began to study economics, political science, and cosmology, which influenced his work. A detailed study of the reflection of the writer's ideas in the field of physical economy in the novel would have been impossible without the use of special literary methods and techniques. The hermeneutic method was used to understand and interpret the scientific and artistic heritage of M. Rudenko (in particular, the work "Energy of Progress" and the novel "Formula of the Sun") and was used for a comprehensive interpretation of the author's ideas. As we can see, the novel has a scientific basis in the form of the author's hypotheses, which need to be interpreted before reading the novel itself, so that the motives for writing and the main ideas of the work are understood. The authors have made a very brief but necessary presentation of the main provisions of Mykola Rudenko's scientific works in order to understand the direction of the study of the fiction novel 'Formula of the Sun', since the writer in his fiction novel presented serious scientific ideas that are of interest to researchers in the third millennium.

Results and discussion

For Mykola Rudenko, exposing the fallacy of Marx's theory of surplus value and popularizing the ideas of the Ukrainian scientific school of physical economy, defining a national development strategy was a life mission. Today, Marx and his doctrine are viewed from different points of view (Bilyi, 2018). To understand the man who started out as a poet of the socialist realism era and came to physical economy as an antagonistic alternative to Marxist political economy and began to point out the mistakes of Karl Marx in an era when the authority of the German political economist was indisputable, it is worth taking a quick look at the path that the Ukrainian writer took.

Thus, the aspiring poet Mykola Rudenko immediately became popular at the behest of the Soviet party ideologue Lazar Kaganovych, Secretary of the Central Committee of the Communist Party of the Soviet Union (Shapoval, 2007), when he criticized the nationalism of the prominent Ukrainian poet Maksym Rylsky: "instructed by Kahanovych to speak at a meeting of young writers with a critique of M. Rylsky's poem "Journey to Youth" (Rudenko, 2013, p. 237). Rudenko owed his career to the patronage of the top leadership of the USSR Communist Party and, of course, fully shared the party ideology. The Twentieth C.P.S.U.

Congress (14-25 February 1956), where Nikita Khrushchev's closed report "On the Cult of Personality and Its Consequences," marked a deep turning point in Rudenko's worldview and, as a result, in his life. To understand the origins of the cult of personality, Rudenko studied the "Capital" (Marx, 1982) and many other works and found errors in Marx's theory of surplus value, which was the basis of the Soviet economic system. Rudenko's study of the origins of party ideology and the principles of economic development in the USSR led him from Karl Marx's "Capital" to Fr. Quesnay "Economic Table" (Quesnay, 1960) and later to Serhiy Podolinsky's "Human labour and its relation to the distribution of energy" (Podolynskyi, 2000). Seeing the difference in the approach to the development of the economy, ecology, the search for alternative energy sources, and the understanding of man's place in the world, Mykola Rudenko came to criticize the Marxist-Communist ideology and methods of state administration in the USSR, which resulted in his being tortured in a psychiatric hospital (a popular method of combating dissent in the USSR), and later serving 12 years in prison, and his works being withdrawn from sale and libraries. As we can see, Mykola Rudenko came to criticize the Communist Party and define Ukraine's role in global geopolitics when thoughts about the falsity of the communist course were persecuted, and there was no demand for an independent Ukrainian state even in Ukrainian civil society itself.

Party persecution did not stop the writer. He continued to work on finding ways to develop Ukraine and civilization and created works of fiction in which he first tried to encode his ideas to avoid communist censorship. After the 1970s, he began to openly expose the falsity of Marxist ideology and the crimes of the Communist Party and called on the Ukrainian nation to begin defending its rights and freedoms. The result of the writer's search and the most important work of his life was "The Energy of Progress" (1972-1974) (Rudenko, 2008), which was presented in 1974 at the Moscow apartment of Academician Andrei Sakharov. Since the author used his scientific work as a basis for writing the fiction novel "Formula of the Sun" (Rudenko, 2007), we consider it necessary to outline the main differences between the political and physical economies highlighted in "The Energy of Progress" so that the motives for writing the novel, its main ideas, characters, and plot development can be understood.

Rudenko began “The Energy of Progress” with a study of the nature and functions of money and its impact on the individual and the state as a

whole. Unlike Karl Marx, who saw money as a means of fulfilling needs, M. Rudenko assigned money the role of relative value.

Table 1.

The role of money in the interpretation of M. Rudenko and K. Marx

<i>The role of money in M. Rudenko’s “Economic Monologues”</i>	<i>The role of money in Marx’s “Capital”</i>
<i>“Money has never been anything but the equivalent of solar energy flowing through economic arteries” (Rudenko, 2008, p. 218).</i>	<i>“It functions as a general measure of value, and it is primarily through this function that gold - this specific equivalent commodity - becomes money” (Marx, 1982, p. 52).</i>

Marx and Rudenko also differed in their understanding of the nature of substance and matter. The writer interprets substance as the basis of everything, that is, matter: “Substance is not matter – it is only a relative state of matter... matter is the substance of everything that exists and happens” (Rudenko, 2008, p. 210). Therefore, he insisted that the concept of “social substance” was artificially invented by Marx because such a substance does not exist in nature: “Since the 'social substance' is not matter, it is

merely a subjective idea of K. Marx” (Marx, 1982, p. 214).

K. Marx explained the “substance of value” as derived from the “substance of labor”. What, in M. Rudenko’s opinion, was Marx’s mistake? First, human labor does not create energy; it is possible only if a person uses the energy received from Nature in the form of food. M. Rudenko argued that the value created by the labor of millions of industrial workers is relative.

Table 2.

Substance of value according to M. Rudenko and K. Marx

<i>Substance of value according to M. Rudenko</i>	<i>Substance of value according to K. Marx</i>
<i>“Therefore, when we talk about the substance of value, its definition by labor is not only questionable but also generally wrong. In this case, we are abusing the term "substance" - the greatest of all human concepts” (Rudenko, 2008, p. 215).</i>	<i>“So, use value, or a good, has value only because it embodies, or materializes, abstractly, human labor. How can we measure its value? Obviously, by the amount of labor contained in it, this substance that creates value” (Marx, 1982, p. 34).</i>

As we can see, M. Rudenko’s and K. Marx’s interpretation of the concepts of substance, substance, "social substance" and "substance of labor", etc. is a clear demonstration of the fundamental difference between political economy and physical economy. Having realized this difference, one can understand why the Ukrainian writer set out to create “Formula of the Sun”.

Rudenko into an “enemy of the people”, and the novel, which was intended to reveal the need for reforms in the state system, was not censored.

In 1971, Mykola Rudenko submitted a completely atypical novel-treatise, “Formula of the Sun”, to the Soviet Writer publishing house. The creation of “Formula of the Sun” occurred during the so-called “stagnation” period, characterized by the flourishing of the Communist Party’s ideological propaganda, forced russification, and total control and censorship of culture and art. For review, the work was submitted to a Communist Party activist of the USSR, Doctor of Historical Sciences, Professor V. Malanchuk and Doctor of Philosophy, Professor B. Kublanov, who turned

The author explained the reason for writing the novel-treatise in his memoirs “The life is greatest miracle”: “The main thing I wanted to express was Formula of the Sun. This is how I called this problem, which covered the whole range of issues related to the origin of surplus value” (Rudenko, 2013, p. 466). “Formula of the Sun” was intended to highlight, first of all, the author’s point of view on the source of absolute surplus value and to acquaint the reader with the achievements of the Ukrainian school of physical economy (in the novel, the author calls the representatives of physical economy Gnostics), which influenced the ideological concept and plot of the work – all the events of the novel revolve around one theme.

The form of a novel-treatise simplified the plot of the text as much as possible and made the subtext

transparent. This form was necessary for Mykola Rudenko to introduce material that reveals the achievements of the Ukrainian school of physical economy and the miscalculations of the political economy that underpinned the USSR economy. The text of the treatise, without requiring a stunning plot to depict the system of events, made the characters simple and polar, and some of the events of the work were predictable.

The events of the novel unfold in one simple storyline, which tells the fate of the scientific work of retired colonel Vasyl Horin. The story is told from the perspective of Sofia Horin, the widow of Vasyl Horin, who finds herself in a situation quite atypical for a Soviet sanatorium doctor: after her husband's death, the Russian Committee for State Security (CSS) tries to seize the three copies of the work from her in order to prevent the ideas of her deceased husband from being made public. Vasyl Horin's manuscripts became a test of resilience and courage for Sofia and her adopted son Serhii despite a powerful enemy in the form of a totalitarian communist state.

As a treatise, "Formula of the Sun" has semantic blocks, or thematic nodes, where a particular statement (Mudrak, 2019) is defended or developed. The author moves from one theme to another with the help of the novel's protagonist, Sofia Horin, who, after losing her husband, began keeping a diary. When she sat down to write down her notes, she did not record the economic state of the country or describe the state system. On the contrary, she sat down to write her diaries to organize her life through introspection. Gradually, the records turned into a full-fledged genre of documentary, because Sofia recorded only everything that characterized the era in which she lived. The description of her experiences becomes a true portrayal of social processes, the state system, and the political system in the USSR. Giving the novel a certain intimacy, the diary form smooths out the political acuity of Sofia's narrative and creates a complete illusion of the authenticity of the events described in the novel. Behind Sofia's biography, the writer hides the characteristics of the political system in the USSR at the time of the events of the novel, which fully falls under the signs of a totalitarian state and political power: the presence of a monopolist party that merged with CSS and the judiciary, the existence of a single ideology, the blocking of unwanted information by CSS and law enforcement agencies, state control over the life of the population, centralized planning of production and distribution of material goods, etc. (Bilyi et al., 2018).

After the end of the war, retired colonel Vasyl Horin spent more than a decade searching for ways to improve the living conditions of his countrymen, because although the country was gradually recovering from the war, the standard of living was not improving. Horin began to study the foundations on which the USSR's economy was based, realizing that the quality of life of citizens primarily depended on the state of the country's economy. The results of Vasyl's research were disappointing. He realized that the country's economy was developing in the wrong direction and that the moment would come when the USSR, which was huge in terms of territory, collapsed under the pressure of economic problems: "There is a time bomb in the foundation of our state. Believe me, Sonia, it is capable of causing no less disaster than an atomic bomb. Sooner or later, it will explode" (Rudenko, 2007, p. 305). Horin realized that, given the size of the country, the collapse of the USSR's economy could have a negative impact on the entire European continent and on the population of the enslaved people themselves, who would find themselves unwillingly on the ruins of a totalitarian state.

Not fully realizing that the Communist Party was the center of corruption in the state authorities and the development of the planned economy, Vasyl Horin began writing letters to the state authorities, trying to change the country's wrong course: "Vasyl thought that the Party had only two decades for perestroika" (Rudenko, 2013, p. 305). As we can see, Vasyl Horin's thoughts agree with the position of the author of the novel, which is highlighted in "The Energy of Progress" and in some scholarly articles, in particular, in the study "The Road to Chaos" (Rudenko, 2008). R. Nakonechnyi and A. Kopytko note that Rudenko's thoughts on the prospects for Gorbachev's reforms in the USSR, set out in "The Road to Chaos", proved prophetic: "Relying on Marxist theory, which detached man from the fundamentals of his being, subordinated him to the interests of production, in the opinion of this thinker, threatened a bloody future and a sharp increase in chaos in public life" (Nakonechnyi, & Kopytko, 2013).

Vasyl Horin called his research on the source of absolute surplus value the "Formula of the Sun". He argued that the generation of absolute surplus value is accompanied by a strong correlation between space energy, solar radiation, humus, and photosynthesis. Although these processes occur without human intervention, human labor plays a crucial role in generating absolute surplus value, just as a catalyst in a chemical reaction.

Thanks to useful human labor, conditions are created under which additional biological energy is generated: “<...> surplus product (and hence surplus value as its reflection) is born not just from social labor-in fact, they are born from nature, and labor only contributes to their birth” (Rudenko, 2007, p. 344).

Gradually, a struggle unfolded around the scientific work of an unknown retired colonel, who was not even an economist by education, dividing the characters of the novel into two antagonistic camps: representatives of the Communist Party (Yevhen Korobov, an employee of the Kyiv regional Committee of the Party; Petro Kulyk, Deputy Chief Physician of the Sanatorium; Yurii Smokovskyi, Third Secretary of the regional Committee; Later Secretary of the Central Committee of the Communist Party of Ukraine; Sofia's first husband and others) and advocates of physical economy (Sofia, her son Serhii, uncle Sashko, daughter of Yurii Smokovskyi Nina, head of the soil research house Karpo Osadchyi, agronomist Pavlo Mykhailovych).

If you take a superficial look at the retired colonel's discovery, you will not see any scientific novelty in it. Humanity has been working on the land for centuries, and today crop production as a branch of science has been highly developed. Then why did such a struggle unfold around Horin's work that people were ready to sacrifice their lives for the colonel's manuscripts, and the novel *The Sun's Formula* was declared “ideologically hostile” in the USSR?

Given the circumstances and the time when Horin attempted to make his discovery public, his work had the effect of a bomb. It was the second decade after the war (1961), and the USSR had already seen the results of Marxist political economy: the dekulakization of the Ukrainian countryside, the Holodomor of 1932-1933, forced Russification, degradation of agricultural production through a haphazard planned economy, destruction of productivity growth and economically unjustified mass political campaigns. During this period, the country developed its nuclear and missile capabilities and sent a man into outer space. Having spent more than a decade studying complex economic processes, Horin pointed out the mistake made by Karl Marx, the ideologue of the only official party and state political and ideological doctrine, the main pillar and justification for the power of the CPSU: “Marx made a mistake in identifying the sources of

surplus value! <...> It is wrong to explain its origin by the exploitation of labor. Quite the contrary: exploitation leads to the extinction of the sources of absolute value – then comes the famine, social chaos, destruction of the state foundations” (Rudenko, 2007, p. 305).

Horin disputed Marx's claim that industry is a solid foundation for economic development, insisting that the growth of absolute surplus value occurs only in the agricultural sector: “Marx knows something about the factory industry, but he knows nothing about the deep (i.e. substantial) nature of agriculture. Here he was mentally blind” (Rudenko, 2007, p. 345). Thus, Horin argued that the industrial worker does not create additional biological energy; he uses it because without energy there would be no labor as such, and Marx's surplus value is a relative surplus value because the absolute one is obtained only by farmers: “Now let's look at the work of the farmer: by throwing one grain of corn into the ground, he receives hundreds of new grains that did not exist in nature before. This is how more and more new biological energy is born on the globe, which provides for the work of millions of people” (Rudenko, 2007, p. 346).

Thus, the watershed between the two economic theories (political economy and physical economy) is the different understanding of the source of absolute surplus value. According to Marxist political economy, surplus value is created by the additional labor of the worker, which the capitalist appropriates, resulting in the rich from the exploitation of labor. Therefore, it is necessary to take away the surplus value from the capitalist and leave it to the proletariat, and to prevent the capitalist from returning it to himself, it is necessary to establish the dictatorship of the proletariat. This understanding of labor and labor relations caused the totalitarian USSR: “Nowadays, the apparatus of violence hardly buys labor anymore – it takes it with terror. It is profitable for it to create hundreds of thousands of concentration camps, because labor is absolutely nothing in them. The carriers of Marx's theory have the illusion that in this way they are bringing the construction of communism closer.” (Rudenko, 2007, p. 326). A misunderstanding of the essence of economic processes contributed to the emergence of a huge network of concentration camps to obtain almost free labor from political prisoners, and with it, the surplus value, which was usually used for state expenditures. By building the state on Marx's political economy, the party aimed to destroy the peasantry as a class, because

gradually the peasant was to become a proletarian: “<...> the reduction of the rural population is certainly a progressive process.” (Rudenko, 2007, p. 359). Thus, in his work, Colonel Horin pointed out and proved that Marxism is a false doctrine and that it is impossible to build the state’s economy on a political economy: “The cornerstone of Marxism (i.e. Marx's theory of surplus value) he not only questioned but denied altogether. And he denied it quite categorically” (Rudenko, 2007, p. 350).

Horin’s most acute point of contention is the need to develop freedom of enterprise and trade that work for capital: “This, in fact, is the channel of nature from which surplus value is born, it can rightly be called the energy of progress” (Rudenko, 2007, p. 351). Horin argued that bonded, planned labor and the unfair distribution of its results levelled the worker’s motivation to work, and the village in such a situation generally declined. If you build up industry at the expense of the agricultural sector, as was done in the USSR at an accelerated pace during the five-year plans, the state will inevitably become poorer.

Horin concluded that the development of the economy of a land state requires a loving owner and freedom of capital. This was not the case in the USSR; instead, there was an imperfect party regulator that did not see or understand the principles of economic development behind the dry targets. Forced collectivization to eliminate the harmful bourgeois influence of private property depleted Ukrainian black soil and rural degradation: “The apparatus of violence takes away from the peasant the fruits of his labor to the last grain. Cattle breeding is in decline <...> This is how the time bomb laid by Marx in the granite foundations of our state looks like” (Rudenko, 2007, p. 326).

The study of the sources of absolute surplus value led Horin to criticize Capital: “As for Marx, he sinned gravely against the most important law of the universe – the law of conservation and transformation of energy. And for such sins, the Universe punishes mercilessly” (Rudenko, 2007, p. 510). The appeal to the law of conservation and transformation of energy, discovered by the founder of the Ukrainian School of Physical Economy S. Podolynsky, in his study “Human Labor and its Relation to the Distribution of Energy”, introduces a different view of the development of economy and civilization from the Marxist view.

The innovation and originality of S. Podolynsky’s concept is that he was the first philosopher and economic to analyze the types of energy on the planet and to point out that agriculture is tangential to the creation of absolute surplus value: “At present, we cannot but recognize that the amount of this energy is limited and is directly dependent on the vigor of the vegetation. But we also know that it is dependent on the amount of human labor applied to agriculture” (Podolynskyi, 2000, p. 275).

In the “Formula of the Sun”, the writer shows the origin, formation, and development of the Ukrainian school of physical economy in a state dominated by Marxist Communist ideology that tried to destroy any alternative sciences. In his memoirs “Life is the Greatest Miracle”, M. Rudenko recalled that the foundations of physical economy were the teachings of ancient Gnostics: “<...> its foundation was gnosis” (Rudenko, 2013, p. 397), so it is not surprising that the writer called the characters of the novel who shared Vasyl Horin’s views Gnostics.

The Gnostics are the bearers of a new approach to economics, and their ideas are developing in harmony with the views of the physiocrats, whose ideologist was Fr. Quesnay and S. Podolynskyi, the founder of the Ukrainian school of physical economy: “<...> there was a rediscovery of the same economic laws. <...> but Quesnay discovered them from the earth’s side, and Vasyl discovered them from the sun’s side. Here a new quality emerges – a link to the Cosmos, to the natural science of the XXth century.” (Rudenko, 2007, p. 452).

Synthesis of the ideas of physiocrats, S. Podolynskyi (Podolynskyi, 2000), V. Vernadskyi (Vernadskyi, 1989) and other allows us to look at Ukrainian black soil in a new way, through the eyes of gnostics, revealing its value for the development of the state and civilization: “For our black soils are no longer just earth minerals. These are, one might say, cosmic accumulations” (Rudenko, 2007, p. 451). Therefore, the state of Ukrainian villages and fertile soils was of particular concern to Vasyl Horin and the characters who shared his views, as Ukrainian black soil is a strategic resource for all mankind and a key to solving global civilization problems.

The first person to see in practice the negative results of industrial development at the expense of the agricultural sector of the economy was Sofia’s uncle, whom she simply called Uncle Sashko. This is a collective image of a Ukrainian

peasant who has concentrated the mental traits of the Ukrainian nation: a good owner who loves his land and the work he does on it, who is honest, principled, and responsible. Uncle Sashko perceives the Universe through a pantheistic Christian worldview, which allows the peasant to combine new approaches to working on the land with land management, whose traditions are lost in the depths of time: "There is a great order! There is an order, brother, that nothing can break. This is called the laws of nature. Both in Heaven and on Earth" (Rudenko, 2007, p. 380). Uncle Sashko's love for the land could not be suppressed by planned, almost free, work on the collective farm. The experienced agrarian was concerned about the depletion of black soil because of the implementation of state procurement plans and consumerist attitudes towards natural resources. He calculated that if approaches to farming were not changed, at some point Nature would refuse to fulfil the ever-growing needs of the state: "How do we look at it now? We take what we need from it. Housing, clothing, food <...> Let's say we have taken it. And then?" (Rudenko, 2007, p. 387). Uncle Sashko saw that the artificially introduced growth of industry at the expense of the agricultural sector was destroying the state's economy: "Can you imagine a person cutting off his leg to boil it, well, to satisfy hunger? <...> And we are doing it, my friend. We destroy agriculture, and we build factories. And the land, brother, will not forgive us for this" (Rudenko, 2007, p. 388).

The peasant interpreted the natural and economic processes he observed while working on the land with the help of the Bible: "There was Jesus, the great preacher, whom God really sent to the Earth <...> And because He saw himself in the bread." (Rudenko, 2007, p. 400). The interpretation in

the "Formula of the Sun" of the source of absolute surplus value through the prism of the Christian worldview and the figure of Jesus Christ in particular brings the text of the novel closer to a treatise as a work of scientific or religious nature (Kovaliv, 2007, p. 496).

In the mouth of Uncle Sashko, the writer presented his model of the economy, which he outlined in detail in "The Energy of Progress" (Rudenko, 2008). Understanding this model is the most difficult aspect of the novel. If the reader understands how Rudenko's economic model works, he will also feel the difference in the interpretation of the sources of absolute surplus value by Marxists and representatives of the physical economy, which is the goal of "Formula of the Sun" (Rudenko, 2007).

Rudenko's model of the distribution of biological energy in the agricultural sector of the economy is reflected in the allegorical 5 loaves of Christ, which should be divided in equal parts among the five sectors of the economy to ensure the economic development of the state: 1/5 of the income (1 loaf) from the harvest should be left for the peasant, the same equal parts should be allocated to the laborer, the votary and the manager, the fourth part should be directed to the development of livestock, and the conditional fifth loaf should be used to restore the black soil. The writer argued that "this economic model can easily be raised from the village level to the national or even global level. Then we will see three economic spheres: agriculture, industry, and the state" (Rudenko, 2013, p. 417). Thus, the agricultural sector of the economy should retain three parts of the income from harvested crops, and two parts should be used to meet the needs of industry and the state apparatus.

Table 3.
Rudenko's model of harvest distribution

Annual grain harvest				
Land	Straw (2/5)	Peasant	Industrialists	Grain (3/5)
	Cattle			State and logos
	peasant			state

According to uncle Sashko, the impoverished standard of living in the USSR was because the Communist Party had upset the natural balance that had been maintained by Ukrainian peasants for centuries: "Vasyl, do you know what the worst thing is? The fact that the peasant has ceased to be the owner of his bread. By this,

brother, we crucified Christ. And we are bitterly offending the Mother of God – the land does not receive its share" (Rudenko, 2007, p. 388). Uncle Sashko also knew the cause of the famine in Ukrainian villages in 1933: the planned economy, forced collectivization, lack of freedom of trade and unbearable state

procurement plans: “Do you think people in Ukraine have been dying recently? The devil took away the Holy Trinity from the people. And note: with the church” (Rudenko, 2007, p. 381).

All the characters in the novel, without exception, understand the significance of Vasyl Horin’s discovery. The attitude towards the retired colonel’s manuscript differs in the goals pursued by the characters: the Gnostics, thinking on a large scale and in the long term, seek to preserve the work because it develops a model of alternative state development, while representatives of the Communist Party and its satellites are looking for opportunities to destroy the intelligence because its popularization threatens to lose power.

Conclusions

According to the author’s intention, the novel “Formula of the Sun” became a field for anti-Marxist and anti-Communist discussion and at the same time a work of fiction. Thus, the main characteristic of the novel is a scientific presentation of the author’s ideas wrapped in the fictional cover of the story of Vasyl Horin’s discovery. Vasyl Horin’s work is an accurate reflection of Rudenko’s ideas, which the author presented in “The Energy of Progress” and his memoirs “Life is the Greatest Miracle”, and highlights the disruption of the complex chain of social and state relations in the USSR, which eventually made the Union an untenable totalitarian state. The collapse of the USSR was predicted in The Sun’s Formula 20 years before the collapse of the Soviet empire, and this prediction was based not on the author’s emotions or desires but on complex and profound economic calculations. The synthesis of economics, religion, philosophy, and some applied sciences gave the fiction novel the features of a scientific polemical treatise. The novel focuses on the conflict between representatives of physical economics, who argued for state changes based on scientific research, and supporters of political economy, who, with the help of corrupt law enforcement agencies and the CSS, tried to destroy even the desire to fight for an idea that differed from the official ideology through intimidation, harassment, blackmail, and searches. Given the time of the novel’s writing (the 1970s), it is necessary to note the author’s extraordinary courage to prove that Karl Marx’s political economy was fundamentally flawed in the era of “stagnation”. The writer argued that the state of civilization and the planet depends on humanity’s ability to create a model of the

external world and, on this basis, to develop a strategy of behavior. The new worldview, based on the laws of physical economy, will help people return to the natural and space environment and solve the acute global problems of our time. The work of representatives of the Ukrainian scientific school of physical economy is, first of all, a prognostic program of action not only for the Ukrainian people but also for the entire progressive humanity.

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