

This is an Accepted Manuscript of an article published by Taylor & Francis in *Slavonica*, 2020, 25(1), 1-24. Available online: <https://doi.org/10.1080/13617427.2020.1754570>.

The Anthropocene on Planet Water. Competing Views on Rivers and Geography in Sergei Zalygin's *Ekologicheskii roman*

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The Anthropocene on Planet Water. Competing Views on Rivers and Geography in Sergei Zalygin's *Ekologicheskii roman*

Sergei Zalygin's (1913–2000) autobiographical *Ekologicheskii roman* ("An Environmental Novel", 1993) tells the story of a Soviet water engineer and ecologist Nikolai Golubev between the Russian Civil War and the aftermath of the Chernobyl nuclear disaster. The protagonist is repeatedly confronted with state modernization efforts, especially on issues related to harnessing major rivers. My paper examines from an ecocritical point of view how the conflicts and dialogues between the government representatives and the main character relate to the development of Russian environmental thinking. I argue that the protagonist's relationship with his environment follows Lev Berg's almost Schellingian concept of geographical landscapes, while the state authorities typically represent Andrei Grigor'ev's ideas, based on dialectical materialism and the Stalinist interpretation of Engels's dialectics of nature. The failure to understand the significance of Vladimir Vernadskii's concept of the noosphere, the precursor of the Anthropocene, is central in the novel's critique of the Soviet state's so-called amelioration of the natural environment.

Keywords: Anthropocene; ecocriticism; noosphere; Russian literature; river; Sergei Zalygin

During my whole career, I have written perhaps only one or two stories, where the river does not appear. — Sergei Zalygin¹

Russia is the largest country on Earth, and the abundance of space has been an important factor in Russian national identity. In post-Soviet Russia, spatial metaphors of territory and geographical space have been central to ideas of Russian identity.² Writers and their literary imagination have had a great influence on public opinion in the literature-centric Russia. The connections between geography and Russian culture have been the object of many scholarly works, varying from depictions of the Caucasus in nineteenth-century literature to early Soviet films' visions of new lands.³

Ecocriticism is an 'earth-centred' approach to cultural criticism. In her review of the history of ecocriticism, Pippa Marland notes that at its heart is the conviction of an ongoing ecological crisis that raises a need to revise the ways in which we inhabit the planet.⁴ Ecocritics believe that our cultural understandings of the relationship between what we call 'human' and 'nature', as well as perceptions of these two ideas, have greatly contributed to our damaging modes of being. Sergei Zalygin (1913–2000) was a remarkable environmentalist, hydrologist, novelist, essayist, literary critic, and the editor-in-chief of the leading Soviet literary magazine, *Novyi mir*, who shared these convictions.

This article contributes to the discussion on spatiality, Soviet environmental history and Russian literature by examining from an ecocritical perspective how Zalygin's *Ekologicheskii roman* ('An Environmental Novel', 1993) depicts geographical metaphors and understandings throughout the history of the Soviet Union. The well-known writer and journalist Iurii Gribov describes *Ekologicheskii roman* as Zalygin's greatest novel, which draws parallels between ecology and politics and for which many are grateful.⁵ It is essential material for my purposes, because it covers over seventy years of Soviet environmental history with a special focus on rivers.

My focus is on cultural meanings of rivers as the novel is full of debates about Russian rivers and the extent to which we can use them. Russian culture has always existed mostly next to major rivers, which have played a great role in the development of Russian national identity.⁶ Ever since the medieval period, rivers have borne special meanings in Russian literature too. In *Ekologicheskii roman*, metaphorical meanings of the river profoundly influence the main character, Golubev, from childhood to old age. The environmentalist Golubev is repeatedly confronted by government officials, advocates of modernization, on geographical issues concerning rivers. These

geographical riverscapes, together with metaphorical meanings of the river, constitute the ‘imagined geography’⁷ of the novel, which depicts Soviet Russian environmental history as the author imagined it in the early post-Soviet years.

Ever since the beginnings of environmental criticism, scholars have debated its role and objectives. Two influential ecocritics, Richard Kerridge and Greg Garrard, have argued that ‘cultural criticism can help avert, resolve, mitigate or at least comprehend ecological problems’.⁸ Earlier, Garrard stated: ‘Ecocriticism cannot contribute much to debates about problems in ecology, but it can help to define, explore and even resolve ecological problems in [a] wider sense. One “ecocritical” way of reading is to see contributions to environmental debate as examples of rhetoric.’⁹ I follow this suggestion and examine Zalygin’s characters’ rhetoric by exploring how the views of the supporters and opponents of river amelioration reflect the development of Russian environmental thinking, and by identifying the main argumentation for and against harnessing rivers as part of Soviet modernization. Purely geographical approaches cannot grasp the cultural, philosophical and existential meanings of the river. My ecocritical analysis highlights these meanings, which include both a physical and a metaphorical level as Zalygin’s novel mixes real geographical debates with the writer’s environmental imagination.

I also discuss the presentation of the concept of the noosphere in the novel, and its relationship to a widely-discussed concept in the environmental humanities in the 2010s, the Anthropocene.¹⁰ Through the noosphere concept, this Russian novel predates by several years the current global discussion among ecocritics on the challenges of the Anthropocene.

Superficially, *Ekologicheskii roman* presents the two sides of the Soviet environmental debates originating from Vladimir Vernadskii, the creator of the

noosphere concept, and Iosif Stalin, the country's totalitarian leader. I find this comparison unbalanced, and I have identified a more useful pair that is implicit below the superficial level: two influential Russian geographers of the first half of the twentieth century, Lev Berg and Andrei Grigor'ev. I show how their geographical understandings are behind the novel's antagonistic depiction of Vernadskii and Stalin.

Ekologicheskii roman is heavily autobiographical, and includes elements from scientific research, the essay, the traditional novel, utopia and dystopia.¹¹ From a natural philosophical point of view, it has justifiably been read as a technocratic dystopia, because it presents technocratic utopianism as leading to a dystopic society, which spoils the natural environment.¹² As Irena Rudziewicz notes, the author seeks to understand the spiritual and moral origins of his characters' behaviour in their contacts with the natural world.¹³ The novel's hero, hydrologist Nikolai Golubev, is evidently the writer's *alter ego*. He tries to find ways to stop people's thoughtless, irresponsible acts against nature and raise their ecological conscience, repeatedly failing to have an impact.

The river of Zalygin's novel is an active agent: it has a huge effect on the protagonist. It is also a fragile victim of human exploitation. It is not just a precondition of life, but rather life itself, and the fate of the people is closely connected to the fate of the river. Zalygin's river resembles those of two other important Soviet-era Russian writers of so-called Village Prose (*derevenskaia proza*), Valentin Rasputin and Viktor Astafiev.¹⁴ The river is an eternal companion of the people, and an essential precondition of human culture. The border of nature and culture is unclear or non-existent. Rather, human culture is represented as part of nature and a product of the river.

To illustrate changes in environmental thought in Russia, my analysis follows the chronological and episodic structure of the novel. This helps to focus on the development of Golubev's environmental thinking, which outlines my argumentation. Before embarking upon the analysis, I will first present the most important facts on Zalygin's biography and briefly explain the general structure of *Ekologicheskii roman*.

Sergei Zalygin – an influential writer, editor and environmentalist

Sergei Zalygin studied for a degree in hydrotechnical agricultural engineering and worked as a hydrological engineer on the Arctic Circle on the lower Ob during the Second World War. After the war, he started his literary career and began a scientific career in hydrology and irrigation. In the early 1960s, he perseveringly campaigned against the building of a hydroelectric power station on the lower Ob. The project was cancelled, which earned him the designation 'the man who saved the Ob'.¹⁵

Zalygin's writings focus on reality and facts and depict a deep connection between people and their environment. His prose writing started to handle the essence of nature in the novel *Tropy Altaia* ('Altai Paths'), published in 1962. In 1965 he published the influential novel, *Na Irtyshe* ('On the Irtysh River'), which began a new era – it was the first work to openly describe and criticize the Soviet enforced collectivization of the 1930s, as well as being one of the fundamental works of the emerging movement that became known as Village Prose.

At the end of the 1960s, Zalygin accepted a position on the board of the Writers' Union. Many of his 1960s–1980s essays handle literature's connection to nature,¹⁶ and he was also an active opponent of the Northern river reversal project.¹⁷ In 1986, he was the first non-Communist Party member to become an editor-in-chief of a Soviet literary magazine.¹⁸ Zalygin held the post of editor-in-chief of *Novyi mir* until 1998. During the last years of the Soviet Union, he published numerous works that had been banned for

years. Mikhail Gorbachev has stated that Zalygin persuaded him to allow the publication of Aleksandr Solzhenitsyn's *The Gulag Archipelago* in *Novyi mir* in 1989–1990.¹⁹ Back in 1973, Zalygin had – among thirty other Soviet writers – condemned Solzhenitsyn in an open letter to the Party newspaper *Pravda*.²⁰ Later, Zalygin claimed that he had never been interested in politics, only literature and ecology.²¹

In the last years of the USSR, some Village Prose writers expressed xenophobic and anti-Semitic statements. Due to this, the whole movement has been associated with extreme Russian nationalism and chauvinism. However, as Kathleen Parthé argues, this reactionary stigma is overrated, and unnecessarily attributed to all Village Prose writers.²² While there were nationalistic tendencies in the work of some writers, others continued to work on ecological issues. Environmentalism became an ever more important part of Zalygin's writings in the 1980s, which is evident in his struggle against the Northern river reversal project.²³ Zalygin has also stated that even though he was never a member of the Communist Party, he did not consider himself a dissident.²⁴ Still, he very much wanted to be part of the restructuring work of the Soviet state and society under Gorbachev. In *Novyi mir*, Zalygin tried to tone down the anti-Semitic comments of some writers.²⁵

During the last two decades of Zalygin's life, the unity of people and nature was a major theme in his writing. He published *Ekologicheskii roman* in *Novyi mir* in 1993, when his anxiety about the state of the natural world was most acute.²⁶ Zalygin has stated that the novel is very autobiographical and documentary, that much of it is based on his actual experiences.²⁷ It would be tempting to read the novel as historiography; nevertheless, it is a work of fiction. As such, the author is able to more emotionally express his despair about the state of the environment. Indeed, *Ekologicheskii roman* is old Zalygin's cry of distress.

The novel consists of a prologue and seven episodes, which advance chronologically from the late 1910s to the early 1990s. The prologue is set in Golubev's childhood during the Russian Civil War, when the future hydrologist struggles to find a meaning for his life and finds it when faced by the powerful flow of a river during an attempt to end his life. The first two episodes are set during the Second World War and the construction of Transpolar Railway soon after the war. The following episodes are set in the 1960s and consider the hero's significance in cancelling the plans for the lower Ob hydropower plant before describing his consultative visit to the construction site of the Aswan High Dam in Egypt. The fifth episode describes Golubev's reunion with his teenage sweetheart, and the next narrates Golubev's two months in hospital after returning from Egypt. The final episode is set in the early 1990s and the Pripyat River, which was badly polluted with radioactive isotopes after the Chernobyl nuclear disaster. Visiting this river, the old protagonist loses his will to live and sees no other way out but to take his own life, which he never does.

My ecocritical perspective on Zalygin's novel implies a focus on the interaction of culture and nature. Zalygin's works offer interesting material for ecocritical research, because of his prominent position in Soviet environmentalism. Rivers were dear to him, and his specialization as a hydrologist adds to the novel's relevancy to research on the cultural meanings of rivers.

River of life

First, I examine one of the two philosophically most important rivers in Zalygin's novel. It is a river that fundamentally influences Golubev's life in his childhood. Images of this river construct his identity and are an essential part of his childhood memories. The river and its flow become determining factors for the development of the opinions, philosophy, thoughts, actions, decisions and career moves of Golubev, who dedicates

his life to river protection.²⁸ I call this river the 'river of life', and argue that it makes the protagonist understand that by protecting the river he protects his own life.

The novel's prologue narrates a vital turning point in Golubev's life when he is six years old at the time of the Russian Civil War. The boy is disappointed with life, as no one can explain the most trivial things to him, such as how humans came to be on Earth. An old woman tells him about Genesis, but he does not believe the biblical stories. He is also tired of the insincerity of grown-ups as well as frustrated by the injustice of the civil war; he feels that life is foolish and there is no reason to live. He has heard about a student, beaten by both the Whites and the Reds, who jumped in the river and drowned, and decides to also drown himself in the river. He goes to a bridge, climbs over the barrier and prepares to jump into the water. Just then, he notices the flow of the river water, and the sight is compelling:

He had seen this and other rivers before, and he had known that rivers flow, but now he saw for the first time the river current. It was an enormous and fast stream, transparent to some depth, and deeper it was dark and nocturnal, without daylight. Flowing under the bridge, the river foamed around its semi-circular pillar. Passing the obstacle easily and playing along the way, the river burred and changed its colour a little more, and in the huge stream appeared separate streams, some darker or lighter, some slower or faster. Inside these already small streams were undoubtedly other even smaller streams, and no matter how many streams there were, they all were one river, in one current, in one riverbank, in one aim to eternally flow from somewhere to somewhere...²⁹

Faced by the river current, little Golubev wonders why the river flows, where it flows from and where it flows to. He understands the circulation of water on Earth and river's key role in it, and suddenly he is full of life. He realizes that he owes his life to the river, because the river *is* life. He had wanted the river to end his life, but it gave him a new life. The phrasing in the novel creates a strong sense of people as a product of the river,

which 'gave him a new birth' and 'to whom you owe your life'.³⁰ After consulting his parents about the river's role in the ecosystem, Golubev also thinks that human 'existence is indebted to a kind of living movement in this world, similar to the movement of the river'.³¹

Later, Golubev learns that water covers most of the earth's surface and that life began in water. He thinks that 'the planet Earth should appropriately be called the planet Water',³² and decides to devote his life to hydrology. At the Omsk institute he learns more about rivers. Watching his geography teacher's maps, which he 'learns by heart as easily and joyfully as Pushkin's verses', he understands that 'rivers divide the whole world'.³³ The equality of life and the river becomes ever more evident: 'there are two continuous movements on Earth: the motion of life and the flow of rivers, and it is not possible that between the one and the other there was not something in common, a secret, albeit not obvious connection'.³⁴

In the 1960s, Golubev is hospitalized due to heart problems, and this period is narrated in the sixth episode, 'V mire chistoi nauki' ('In the World of Pure Science'). Golubev's existential childhood experience of the 'river of life' connects to what the narrator calls the 'pure science' of the hospital ward, where Golubev becomes acquainted with another patient, Mr. Azovskii, a specialist in literary and theatre studies. Azovskii shares many ideas with Golubev, including a will to support victims of Stalin's repressions and an interest into science. They talk about Maksim Gor'kii and Stalin, wondering why Gor'kii celebrated the White Sea-Baltic Canal³⁵. Why did he celebrate comrade Stalin who 'stayed awake all night working on geographical maps with a red pen in his hand, repairing nature, connecting rivers, drying lakes, taking care of himself but not of nature? Isn't it stupid?'³⁶

Stalin did indeed rule mostly at his Kremlin office, which included a locked room with numerous maps that the leader used when imagining how future developments would be reflected on the map.³⁷ By criticizing Stalin's fascination with maps, Golubev and Azovskii hint that Stalin's understanding of geography was reduced to cartography. They conclude that Gor'kii and Stalin formed an 'anti-natural alliance',³⁸ where Gor'kii's writing inspired Stalin to the further abuse of natural resources. In effect, Gor'kii and Stalin took a grip on the natural space of the Soviet Union and redefined it.

By referring to Gor'kii, an influential proponent of literary socialist realism, Zalygin locates himself in the same continuum as an authoritative writer on the relationship between culture and nature. Zalygin's understanding of nature is the opposite of Gor'kii's, because much of Gor'kii's writing expressed the omnipotence and greatness of humans over nature.³⁹ Zalygin's novel presents Gor'kii as Stalin's aide, whose writing supported Stalin's power and understandings about nature.

Gor'kii is not the only writer who is mentioned in the novel, which lists a series of canonized Russian writers of the nineteenth century: Pushkin, Gogol, Herzen, Goncharov, Lermontov, Turgenev, Nekrasov, Dostoevskii, Ostrovskii, Saltykov-Shchedrin and Tolstoi.⁴⁰ The narrator parallels them to a series of Russian nineteenth-century geographers, whose geographical understandings, which differ substantially from Stalin's and Gor'kii's, he presents in a positive light. Arguably, the author mentions these writers to state that, as the nineteenth century was a golden age for Russian literature, so it was for Russian geography.

Later, when Golubev thinks about his time in the hospital with Azovskii, he calls their hospital ward the 'world of pure science' for '[h]ere science was in no way contaminated, in no way blocked, it was incomparably freer than in any research

institute'.⁴¹ Unlike the universities, which Zalygin knew well thanks to his scientific career, the isolated hospital ward enjoys freedom and independence from the state authorities and thus is not corrupted by ideologies.

He compares this 'pure science' to the child's logic, innocence and purity which prevented him from jumping in the river water when he was six, and concludes that they 'match almost completely'.⁴² When Golubev was on the bridge and the flow of the river stopped him from jumping, it was imperative that the water was flowing, for 'if the water under the bridge had been still, he would have jumped in it without hesitation'.⁴³ When he considers why the river flow had such an effect on him, he thinks a certain child's logic has been dear to him all his life ever since the decisive event on the bridge. Golubev thinks that lacking experience, children do not treat life as their personal property, but are free of prejudice and selfishness.⁴⁴ Since the river equates to life, this child's logic also applies to rivers. This is key to Golubev's environmental thinking: his childhood experience and understanding of the river's role in the ecosystem made him follow this child's logic throughout his life. This understanding can only develop from contact with flowing water, and this logic is the reason why he treats attacks to river systems as attacks to his life.

Although a mention that the river that saved young Golubev's life flows to the Kara Sea, along with knowledge of Zalygin's biography, hint that the river is the Ob, the novel never mentions its name. This gives it a more general character: giving birth and life to people is a universal characteristic of rivers. Valentin Rasputin uses the same technique for the same end in his travel essay 'Vniz i vverkh po techeniiu' ('Downstream', 1972).⁴⁵

Ol'ga Slavnikova reads Golubev as a 'riverman' (*chelovek-reka*), a mix of a river and a human being, who is 'as natural as a river'. According to her, this is visible

in the novel's composition, which inconsistently presents details of the hero's life. Slavnikova refers to the novel's superficially chronological structure, which is broken several times. This creates a feeling that Golubev 'accommodates all that ever happened to him to every moment of this naturally flowing reality'.⁴⁶

When gravely ill Azovskii is taken out of the ward, he is replaced by another patient who also earns Golubev's respect through his vast knowledge of history and culture. Golubev laments the fate of Soviet rivers to him, marking the first signs of Golubev's interest in the idea of riverscapes having been irrevocably transformed by humanity:

It is a tragedy of our days, but inevitable, somehow like envisaged in advance by nature itself... Rivers are a product of their climate, but while they originate in one climate, they then emigrate to completely different climatic zones, which is a fortune for people, but a misfortune for rivers... A river is born in the mountains, but it doesn't stay there, it flows into the plain, and then man begins tormenting it: he takes its flow for irrigation, for water supply of cities, he throws all his excrements in the river, both household and industrial, and what flows into the ocean is no longer a river, but a gutter.⁴⁷

Wars against Nazism and nature

Many environmental debates between the state authorities and Golubev connect to war rhetoric. In the episode 'Zolotaia rybka' ('The Golden Fish'), which is inspired by Zalygin's wartime experiences, Golubev works as a budding hydrologist during the Second World War on the Arctic lower Ob in Salekhard. He thinks he is doing an important and intelligent job, but this illusion collapses when he is assigned the task of planning how an enormous dragnet could be built and used to cover the five kilometres wide river in order to trap thousands of tons of fish and send the catch to the front line. The idea seems silly, but Golubev duly does as expected. He calculates the amount of wood, cable and metal netting needed, and concludes that the project is impossible due

to its scale. However, after a few months he learns that everything is ready. The only problem is that all they catch is a single fish. It does not become clear why the project was so unsuccessful.

Members of the local Communist Party Committee represent the state authorities. For them, the idea of catching almost all the fish from the river for human food is not strange: 'It is a simple thing, nothing could be simpler'.⁴⁸ If they think about the ecological consequences, they would suppose the river would react to the collapse of its fish stock in a way that would enable it to adapt to the new circumstances. Their main argumentation for the project is victory in the war against the Nazis: they want to 'take part in the victory of the [Soviet] troops over fascism'.⁴⁹ The scale of the project and its consequences are not relevant when you are at war, and to triumph over Nazism, you must triumph over nature.

The authorities' war rhetoric, which recurs throughout the novel, reflects their antagonistic view of nature and culture as two separate realms, in a similar way to that in which Communism and Nazism are considered two opposite worldviews. Nazism being the external enemy, the river is here the internal one. Young Golubev's environmental thinking is not yet evident in this episode. He thinks 'the project is crazy' and 'stupid',⁵⁰ but his argumentation concentrates only on the project's insane scale.

After the operation has failed, the Party officials are not disappointed. Contrary to Golubev's expectations, they punish no one. Instead, they celebrate a huge success: 'We blocked the Ob! Before this, no one has blocked the Ob anywhere between the source and the mouth of this great river! We have made history!'⁵¹ This is a valuable lesson for Golubev: for the Soviet state, it is more important to start projects than to successfully finish them. Going down into history for doing something that no one has done before was so valuable that the authorities did not pay attention to the

consequences.⁵² Ecological thinking, however, requires forethought. The verb that the Party officials repeatedly use for blocking the river is *perekryt'*, which in colloquial use can also mean 'to surpass someone or something'.⁵³ Even though Nazism could not be surpassed by blocking the Ob, nature had been.

War rhetoric, Andrei Grigor'ev and dialectical materialism

In the next two subchapters, I study those episodes of Zalygin's novel where debates on the essence of geography take precedence. I will complement my rhetorical analysis of environmental debates, which concentrates on the philosophical existential level, by an examination of the physical geographical level of the novel, which discusses the reshaping of nature as a consequence of Stalinist geographical thinking. I argue that implicitly the novel treats this as a consequence of Andrei Grigor'ev's thinking, which is represented by the various state authorities. Grigor'ev's views are explicitly clearly visible in the episode that I analysed in the previous subchapter and the one I discuss here. This thinking does not see the river as a single living organism. Rather, it mechanically consists of numerous smaller organisms and is a temporary result of the processes that have previously taken place, and there is no reason why it should be permanent.

The second episode, 'Piat'sot pervaiia stroika' ('Labour Camp no. 501'), narrates the construction of the Transpolar Railway, Stalin's post-war project. The narrator notes that Stalin wanted to build a northern railway across Russia to be prepared for a war against the United States.⁵⁴ Zalygin had already written earlier about many of the modernization projects that the novel discusses, but the Transpolar Railway was such a sensitive subject that he had not treated it before.⁵⁵ This is an important project for Golubev's career, because the railway would cross numerous rivers and the project needed his specialization as water engineer.

In this episode, the planners of the railway do not see anything peculiar in building a railway to an area whose living organisms are extremely fragile and where any building project is very difficult. They act as if this kind of difficulty in nature is meant to be overcome by people, who should be able to build a railway anywhere. The argumentation for the project is again mainly about war, this time not against fascism, but against American imperialism and capitalism.

Like the Party officials in 'Zolotaia rybka', the planners of the Transpolar Railway use war rhetoric to justify their actions, which Golubev labels 'anti-natural', 'anti-human' and 'the most pointless creation of human hands in the whole world history'.⁵⁶ Resorting to war rhetoric again emphasizes the separation of culture from nature, which is considered an eternal enemy of humankind. This juxtaposition has obvious roots in the slogans about war against nature of the first Five-Year Plan, launched in October 1928.⁵⁷ Maksim Gor'kii's famous 1931 article 'O bor'be s prirodoi' ('About the Fight against Nature') also reflects this rhetoric.⁵⁸

There is more, however, to the attitude to nature of the Party officials in 'Zolotaia rybka' and planners of the Transpolar Railway. The Great Plan for the Transformation of Nature, which Stalin proposed in the late 1940s, represented the power of the Bolsheviks to shape nature.⁵⁹ To understand the thinking behind Stalin's plan, it is necessary to review the ideas of the leading geographer of Stalin's Soviet Union, Andrei Grigor'ev (1883–1968).

Grigor'ev studied in Berlin and Heidelberg, and was influenced by Alfred Hettner's geography. Being very receptive to the ideological changes attached to Stalin's rise to power, he deviated from Hettner's work, which was considered bourgeois, and directed the most important geographical department of Stalin's Soviet Union. In 1931 he wrote that geography should concentrate on the 'interrelationships of

the processes of a dialectically developing geographical environment' to be able to 'contribute effectively to the burst of socialist construction initiated by Stalin'.⁶⁰

Like Stalin, Grigor'ev supported dialectical materialism, which was based on Friedrich Engels's ideas of dialectics of nature. Engels did not see nature as harmoniously formed, but rather in a state of constant change. Also for Stalin – and Grigor'ev – there was nothing permanent in nature, which Stalin explicitly stated in 1938: 'dialectics view nature [...] in a constant state of movement and change'.⁶¹ Therefore, it is natural for people to shape nature.

This Stalinist interpretation of dialectics of nature leads to a dualistic understanding, where nature and culture operate under strictly distinct laws. Society should transform nature, which has only instrumental value for human self-creation.⁶² Nature, which is in a constant flux, is not a harmonious whole but consists of small pieces. Changing a piece does not necessarily affect anything else, because other pieces are able to adapt to changes in their environment – they are constantly changing nevertheless. This is a great paradox in Stalin's and Grigor'ev's thinking, considering that Stalin also stated, in line with Engels: 'dialectics does not consider nature as a random cluster of objects and phenomena that are separate, isolate and independent of one another but a coherent single whole, whose objects and phenomena are organically related and dependent on one another'.⁶³

Neither Stalin's nor Grigor'ev's geographical thinking bases on the idea of nature as a single whole. Grigor'ev was suspicious of the idea of a single, undivided whole, constituted by the biophysical world and the human society.⁶⁴ Since nature is constantly changing, he reasoned that shaping nature must be part of geography's function. For him, geography is not a descriptive science; instead, it is dynamic and should actively participate in changing the environment. Because Grigor'ev's

understanding followed the views of the autocratic Stalin, it became the leading vision in Soviet geography. Consequences were far-reaching, because in this kind of thinking, nature, which is separate from culture, can adapt to great and fast changes without endangering the whole. Humankind would never be able to change the fundamental substance of nature, not even by redirecting the courses of major rivers or by channelling part of the river water to be able to produce more cotton, which happened in Central Asia and led to the drying up of the Aral Sea.

Golubev hates the idea of an Arctic railway:

Before this, it had never crossed Golubev's mind to doubt the existence of Golubev-the-hydrologist. Rivers flow and he lives next to rivers, they need his engineering skills. But now Golubev started to doubt, heavily and for the first time in his life.⁶⁵

His arguments against the Transpolar Railway are manifold. Central to his views is again the impossibility: even if you could build the rails over the tundra and the Northern Rivers, they would never stand the strain of the trains. The north Siberian natural environment is simply too harsh. Even if the railway somehow could be built, he sees that the Arctic conditions would destroy it. He also argues that the project is insane, because it causes enormous human suffering – those who fought Nazism are now building the railroad as prisoners.⁶⁶ They are treated outrageously and inhumanely, and the number of casualties is great. The bridge construction over the Ob and the Yenisei is especially cruel and unnecessary, because the rivers could be crossed by ferries in the summer and over the ice in the winter.

The Transpolar Railway project was abandoned when Stalin died in 1953, and it has never been finished. This is a sign that Grigor'ev's views of geography started to wane in the Soviet leadership after Stalin's period.

Dead currents of rivers violate Lev Berg's geographical landscapes

After Stalin's death, the Soviet Union experienced a turn to a more environmental vision of the relationship of man and nature. The episode 'Nizhne-Obskaia GES' ('Hydropower Station at the Lower Ob') is set in the early post-Stalin years. It represents the reasons for the new kind of environmental thought more because of party politics than as a genuine change to a more ecological way of thinking. I argue that this episode also implicitly presents the failure to adopt Lev Berg's geographical thinking instead of Andrei Grigor'ev's as a reason for the continued excessive abuse of natural resources in the post-Stalin era.

The episode includes fervent argumentation for and against the eponymous megaproject, which was in the planning phase in the early 1960s. Opposing it becomes Golubev's pet project. His rival is one of the highest engineers, Mr. Chilikin,⁶⁷ who is equally persistent in trying to convince the authorities that the project is essential, that its necessity has even been explicitly written down in the third Communist Party Program, adopted in 1961.⁶⁸ In a meeting with leading geographers, Golubev makes a fool of Chilikin, whose motivation proves to be personal gain. He shows a letter, which Chilikin wrote a year before the Party Program, to his subordinates in various Hydroproject branches. In the letter, Chilikin describes how the new hydropower station would bring glory and wealth to its designers. Golubev also proves that in this letter Chilikin used the same wordings that were later added to the Party Program, which means that Chilikin himself was behind the project's addition to the Program.

The discussion in the novel is very similar to how Zalygin describes his own meeting in the Institute of Geography of the Soviet Academy of Sciences with the head engineer Aleksandr Chemin.⁶⁹ Consequently, the Council of Ministers, the State Planning Committee, various ministries and Soviet Academy of Sciences hold a

meeting, where they decide to cancel the project according to the orders from the Central Committee of the Communist Party.

Chilikin is like Grigor'ev's apprentice. He bases his arguments on the assumption that the country who controls the most energy is the most powerful. If the Soviet Union wants to be the most powerful, it should convert its rivers into energy. For him, rivers are made for human modification and people should improve their river environment. Chilikin wants to serve Stalin, who 'did not leave alive the current of any great Russian river',⁷⁰ which clearly reflects his antagonistic vision of nature and culture. His argumentation stems from past decades and former authorities; it links to the earlier pathos of the 1930s' fight against nature and to Stalin's Great Plan for the Transformation of Nature from the 1940s, as well as to Lenin and his famous slogan 'Communism is Soviet power plus the electrification of the whole country'.

As Golubev had learned already on the lower Ob during the Second World War, many Soviet modernization projects were not intended to be finished. Analogously, says a leading hydrologist to him, the army builds new arms even when the country is not at war.⁷¹ Thus, war rhetoric is part of the argumentation for modernization again. Chilikin has also more practical arguments. The reservoir will produce more fish, and it will be easier to navigate than the river. Further, the Northern fleet would become more powerful.⁷² Chilikin's final argument seems insurmountable: the hydropower station is part of the Party Program to achieve Communism by 1980. He and his colleague Malkov label opponents of hydroelectricity projects 'conservative obstacles of the future'.⁷³ Some of them might indeed be described conservative,⁷⁴ but I argue that at least their geographical views are based on a conserving understanding of the environment, that of Lev Berg (1876–1950).

During the early years of the Soviet Union, the so-called ‘landscape science’ (*landshaftovedenie*) heavily influenced the development of geography, and Berg was an important proponent of it. Berg wanted to explain ‘the geographical distribution of identifiable aggregations of natural objects and phenomena, namely landscapes’.⁷⁵ By landscape science, he means an understanding of geography where its primary role is to study natural landscape units and landscapes.⁷⁶ In contrast to Grigor’ev’s views of dynamic and agentic geography, based on dialectical materialism, this chorological view posits geography as a descriptive science, which explains natural phenomena without actively taking part in them.

Even though the Russian society underwent exhaustive upheavals during the early years of the Soviet regime, geography’s connection to scientists of the pre-revolutionary period was tight. Vladimir Vernadskii based his groundbreaking work with the biosphere on empirical work he undertook around the turn of the century.⁷⁷ Berg’s understandings of geographical landscapes were rooted not only in Russian scientists – such as Vernadskii and his teacher Vasilii Dokuchaev – but in the science of academics from other countries too, most notably Germany and Hettner. Berg’s landscape science is based on a rather materialist worldview. Nevertheless, it reflects the continuum of Schellingian objective idealism, whose influence on Russian understandings of nature has been strong since the early nineteenth century.⁷⁸

In 1913, Berg defined landscape as ‘an area being similar in accordance with the dominating character of relief, climate, vegetation and soil cover’ and divided the Russian landscape to such landscape zones as tundra, taiga plain, forest-steppe, *chernozem* steppe, dry steppe, semi-desert and mountains. Two years later, he defined landscapes as the prime focus of geographical study.⁷⁹ Unlike Grigor’ev, Berg did not diverge from Hettner’s views on geography, which mainly concerned with the spatial

distribution of natural phenomena, and he was attacked for this since 1929.⁸⁰ Grigor'ev also wrote that Berg's landscape science had a 'conservative vision'.⁸¹

Berg thought that geographical landscapes are permanent, or at least not dynamic and dialectical in the sense understood by dialectical materialism. Earth has organized itself in its natural way, and the human world is a small part of this harmonious whole.⁸² The inner harmony of a large whole implies humanity's harmonious relationship to its environment, because humanity belongs to this one whole. The totality of a landscape is a sum of its parts and the totality influences all its parts. If a part of a landscape changes, the whole landscape changes; damming a river will affect the totality, including the humans. This is also an essential starting point of Zalygin's understanding of the physical world: 'the existence of each element depends on the existence of another element, which on its part, sets limits to the other.'⁸³ For the narrator of *Ekologicheskii roman* this interaction has been lost:

Only after a long time science understood that ecology is about the fate of humankind – to be or already not to be in the twenty-first century. This is because all animals and plants depend nowadays, not on one another, but on only one animal: the human.⁸⁴

In Bergian thought, the components of a landscape, such as the river, are living organisms. Therefore, the fate of the river affects everything else. In Berg's thinking, the harmoniously formed landscape cannot adapt to rapid changes. His proponents would not have redirected the waters of the rivers that flow to the Aral Sea to cotton fields. The drying up of the Aral Sea is a logical consequence of the redirection of river water, because it disturbs the homeostasis of the environment. In an essay from 1984, Zalygin refers to a nineteenth-century climatologist Aleksandr Voeikov, who had assured that the Aral Sea would never dry up and disappear, because of the balance of its water system.⁸⁵ The Soviet state interrupted this balance, and Voeikov's assurance

proved wrong due to human intervention. Zalygin's words in 1991 reflect these drastic changes in the Aral Sea environment:

Nature is harmonious, undoubtedly. Only because of its harmony does it exist. But we do not want to understand that harmony – it is also the art of limitations, the art of throwing away everything unnecessary, everything out of place, everything that prevents or will prevent future life on Earth.⁸⁶

Golubev represents Berg's geographical views. This is most evident in the Arctic environment of the lower Ob, where 'space also ceases to be a concept, it appears in its reality, in that absoluteness, without which (according to Newton) there is no being and which does not depend on any processes'. For Golubev, this Arctic space is clearly an environment, which reflects Berg's harmoniously organized landscapes, not a constantly changing process that Grigor'ev proposed. Berg's less dynamic geography is visible not only in the Arctic space, but also in the Arctic time, which is 'less changeable', because of long winter nights and summer days.⁸⁷

Golubev names the governmental water amelioration organization – Hydroproject Institute in the real world – 'kWh', because energy is its business. For Golubev it was 'a sovereign of Soviet rivers, it had unlimited possession over them, rivers were its property, it could control the rivers as it pleased, on its own behalf, on behalf of the state, the Party, the people, the Constitution and socialism in general'. For him, the 'kWh' represents the 'anti-world' and is a proof of man's antinatural character. 'Rivers are no longer nature for the kWh', he thinks, meaning that for them, rivers mean only 'decrees, decisions, development, protocols, projects and feasibility reports'.⁸⁸ A river with a power station is not a river for Golubev anymore.

Following Berg's landscape science, Golubev reasons that damming a river inflicts irrecoverable damage to its environment, while Grigor'ev's proponents see that the river environment would adapt to the new conditions. Golubev considers building a

hydropower station on low-lying lands a great crime, because the reservoir would be ‘the size of Czechoslovakia’.⁸⁹ He argues that no civilized country builds dams in low-lying areas. For someone who treats geography as cartography, this would not be evident, because on the Soviet map the area does not appear large. Following Berg’s ideas about natural landscapes as a harmonious whole, Golubev thinks that even if the dam is removed in the future, the fragile Arctic natural environment would never recover. He is also worried that the human cost of the Labour camp no. 501 will be repeated.

Golubev manages to convince the authorities to cancel the hydropower plant project on the lower Ob. The novel explicitly names three articles written by Golubev in 1962–1963 as having a great influence on the decision.⁹⁰ In reality, Zalygin himself wrote these articles, which *Literaturnaia gazeta* published.⁹¹ He accuses the decision-making organs of narrow-mindedness and failure to hear the experts. He blames the management of Hydroproject Institute for spreading misleading information about the economic and ecological costs of the project. Zalygin argues that this is not a question of ‘natural beauty’ or ‘any kind of protection of nature’.⁹² However, in the novel Golubev argues that the lower Ob area is exceptionally beautiful – even unique – and already for this reason it should not be spoiled. I conclude that Zalygin did care about natural beauty and protection of nature, but did not see appealing to them a good rhetorical way of convincing the authorities.

Golubev’s decisive argument is not geographical but political. He convinces the authorities that Chilikin has foisted the lower Ob project onto the Party Program for personal glory and material gain. The decree about cancelling the project mentions economical losses of forest, oil, turf and gas resources as the reasons. These reasons are proper, considering the changed environmental thinking of the 1960s. In its third

Program, the Communist Party had formalized the break from Stalinism by stating that ‘considerable attention will be given to the protection and rational utilization of forest, water and other natural riches, their renewal and accumulation’.⁹³ Purely Grigor’evian views were not prevailing in the governing organs anymore.

The real reasons for cancelling the hydropower station project on the lower Ob, according to Golubev, were egoist party politics. In the Khrushchev era, science was less an arena for ideological battle, and attitude to ecology was more neutral than in Stalin’s days.⁹⁴ Despite the changed views in the government in the post-Stalinist period, Golubev does not see a true change in the environmental thinking, at least not back toward Berg. In the latter episodes of the novel, the government’s failure to adopt geographical thinking that would be closer to Berg’s science become even more evident.

Harmonious landscape of the Egyptians and the Nile

In the episode ‘Nil – sviashchennaia reka’ (‘The Nile: Sacred River’), Golubev travels in the mid-1960s to the Aswan High Dam construction site in Egypt, where Soviet engineers are building a huge dam across the Nile. His superiors provide the argumentation for this project; they think that they should help to build the hydropower station on the Nile for the sake of Marx,⁹⁵ Engels, Lenin and Khrushchev; for the sake of the friendship of nations and the triumph of socialism.⁹⁶ They do not open their views about the essence of geography, but referring to Engels is enough to locate them in Grigor’ev’s school.

Golubev is against the harnessing of the Nile. His argumentation emphasizes the Nile’s cultural and religious meanings, which are in the core of Bergian views, because the age-old coexistence of people and the river constitutes a permanent, harmonious geographical landscape that Berg promoted. An organic part of this is the cultural

landscape 'in which humankind and the results of its cultural activity play an important role',⁹⁷ as Berg referenced. However, the landscape is permanent only as long as the river stays a river, and Golubev does not think a dammed river is a river. When the river is lost, the cultural and religious connection of the human community to the geographical landscape is also lost.

Golubev bases his arguments on the cultural significance of the Nile, emphasizing the river's religious role, that it has been the sacred, divine foundation of the Egyptian state and culture. Since ancient times, people have depended on its floods and believed that they were the result of the goddess Isis' tears of sorrow. Golubev feels that the Nile is simultaneously the mother and the father of the locals, and that Egypt is the Nile's gift to humankind. Again, as in Golubev's childhood when the river 'gave him a new birth', human culture depicts as a product of the river. Golubev considers it a great sin to demand kilowatt-hours from a god; it means that humans are acting like a god. He asks: 'If there really is no other solution but to build the Aswan High Dam and sacrifice the Nile, why do they celebrate it by an unprecedented jubilee? Why rejoice in a funeral?'⁹⁸ Mentioning sacrifice underlines the religious significance of the river. Golubev also argues for the human cost by comparing the Aswan Dam to the pyramids, but not in the spirit of Evgenii Evtushenko.⁹⁹ He wonders whether the dam will be built by slaves like the pyramids and the Transpolar Railway were.

The cultural connection of the river to human communities is most evident in the episode 'Nil – sviashchennaia reka', because it represents the river as an integral part and precondition of human existence in Egypt. Human culture is not separate from the river but belongs to the same landscape.

River of death and the age of the noosphere

The final, dystopian episode '+30' concludes the argumentation of the previous

episodes by clearly presenting the opposing views of Berg and Grigor'ev. The episode is set in the early 1990s. By raising this juxtaposition then it conveys that Grigor'ev's views about geography still thrived in Russia at the time when the Soviet Union was collapsing. The episode concentrates on Golubev's trip to the Pripyat River in the Chernobyl disaster area.¹⁰⁰ Here, the antagonism is not so much for or against modernization. Rather, it is a question of Vladimir Vernadskii (1863–1945), the founder of biogeochemistry and the first to develop fully the concept of the biosphere, standing against Stalin.¹⁰¹ Golubev hints that only Vernadskii's science comes close to the 'pure science' of the hospital ward.¹⁰² Zalygin has earlier called for the need of what he calls 'noosphere stories'.¹⁰³ Vernadskii and his concept of the noosphere are main motifs of this episode. The narrator explains the concept:

The noosphere is such a state of the biosphere in which rational activities of human beings have become a crucial factor in the development of the biosphere. How do you get along with yourself when your skull has become a geological force?
Without Vernadskii this is not possible!¹⁰⁴

For Vernadskii – thinks Golubev – science is a part of nature, and nature implies the harmony of the species, subspecies and families. Indeed, for Vernadskii, science is a natural development in the evolution:

The evolution of species turns into the evolution of the biosphere. The evolutionary process [...] has created a new geological force: the scientific thought of social humanity. [...] Under the action of scientific thought and human labor, the biosphere goes over to a new state – to the noosphere.¹⁰⁵

Vernadskii further defines: 'The noosphere is a new geological phenomenon on our planet. In it for the first time man becomes a large-scale geological force. [---] The noosphere is the latest¹⁰⁶ of many stages in the evolution of the biosphere in geological history.'¹⁰⁷

For Vernadskii, the noosphere is a stage in the evolution of the biosphere, where human reason and science change the geological features of the earth. This is very close to another concept that has received much attention in the academia since the beginning of the twenty-first century: the Anthropocene. It refers to a proposed geological epoch, where the human impact on the global environment has reached a stage, where it leaves an imprint in the earth's geological system.¹⁰⁸ As Steffen et al. explain, the noosphere is an important antecedent of the Anthropocene, but they do not explain what the main difference of these similar concepts is.¹⁰⁹ In my opinion, the most notable difference is that even though the noosphere has manifested itself through the energy of human reason, in Vernadskii's conceptualization this new geological energy has emerged as a result of general mental development of organisms.¹¹⁰ This does not apply to the Anthropocene, which attaches explicitly to the actions of human beings. For the sake of Zalygin's novel, the Anthropocene might be an even more useful concept than the noosphere, because it handles explicitly humanity's actions in its environment. However, as the narrator defines the noosphere as being the result of 'rational activities of human beings',¹¹¹ for the purposes of the novel the concepts are practically equivalent.¹¹²

Golubev thinks that Vernadskii's position, where science is a part of nature, implies that the destruction of even one species leads to the destruction of other species. This is a very Bergian notion as Berg's landscape science is compatible with an understanding about science as a part of the harmonious whole of geographical landscapes. Like Berg, Golubev also thinks that a river is a living organism and a product of its climate. This is equivalent to what Zalygin has written in his essays. He comprehended nature rather as a complex organic system than as something mechanical, referring to Vernadskii's work as an evidence that the earth is one living

organism.¹¹³ Golubev implies that in order to survive, the Soviet Union should have taken up Vernadskii's science. The dystopian finale of *Ekologicheskii roman* underlines this failure.

Golubev refers to Berg explicitly, when he ponders the forgotten role of the nineteenth-century geographers in modern Russia:

If only Russia would have understood in the footsteps of which experts on its lands it should follow in the future?! But it did not understand, and now it is too late. The visible nature has already been divided into *landscape science*, geomorphology, hydrography, bio and geo, and in these small pieces it was easily subdued by Lenin and Stalin.¹¹⁴

This passage seems to give landscape science a negative meaning, but the criticism is against the plurality of geographical trends in the twentieth century, not on Berg.

In Zalygin's novel, the reasoning of Stalin's thinking follows the argumentation of the advocates of modernity: it involves war rhetoric, the propagation of Communism, maintaining a great power position, science and progress. Even though this is not directly geographical thinking, it shares the ideological base of Grigor'ev's geography. The consequences of Stalinist thinking were obvious for Golubev. In 1986 they materialized in the Chernobyl catastrophe, which contaminated the Pripyat. For Golubev the dead, radioactive river – whose water should be life itself – is a sign that there is no future for Russia.

The poisoned Pripyat depresses Golubev, and it becomes the second river to have a crucial influence on his life. When he was a child, the 'river of life' saved him from taking his own life. Now at old age, the 'river of death' drives him self-destructive. On the radioactive Pripyat, he envisions meeting Russian nineteenth-century geographers,¹¹⁵ born in 1834–1846. He has a heated debate with them on who is responsible for the toxicity of the river. Both sides agree on Stalin's negative influence,

but each side blames the other for allowing Stalinism to thrive in Russia. Apparently, the geographers are representatives of Golubev's innocent 'pure science', precursors of Berg and Vernadskii, and not contaminated by any ideology, as opposed to Grigor'ev's Stalinist geography. Golubev falls deep into self-accusation and sees no other way out but to take his own life: 'Hydrologist Golubev started on the enchanted¹¹⁶ Ob, [...], he will end on the poisoned Pripyat. Logic!'¹¹⁷

Golubev's self-destructiveness is common to some other Siberian autobiographical environmental fiction, most notably Valentin Rasputin's novella *Proshchaniye s Materoi* (*Farewell to Matyora*, 1976), whose protagonists are ready to die along with their home village. However, Golubev's loss of will to live is not due to the actions of the Soviet authorities, but to the discouraging observation that environmental thinking in post-Soviet Russia is not any different from the Soviet era: 'If only El'tsin and Khasbulatov¹¹⁸ knew how tired of them Golubev was! For them, nature didn't even exist. In Golubev's whole life, there hadn't been a single administration in Russia that hadn't deceived him'.¹¹⁹

'Chernobyl accident is not an incident in modernity, it is modernity itself', Golubev concludes.¹²⁰ For Zalygin, 'ecology should not be just a science, but our burning necessity', and turning ecology to a part of people's everyday life was an important objective for him.¹²¹ An essential starting point and an inseparable part of Zalygin's philosophy, morale and ethics is a careful relationship to the natural world and its riches,¹²² visible already in his 1962 novel 'Altai Paths'.¹²³ In the end of the 1980s, Zalygin wrote: '[N]ow it is already very clear: humankind will never see paradise. Avoiding hell is another question.'¹²⁴ When he wrote *Ekologicheskii roman* with its dystopian outcome in 1993, had he lost hope that human existence would ever be compatible with his worldview? My answer is yes and no.

Events take a new turn a day before Golubev has planned to take his own life when his son is killed in a car accident. The son's widow now needs Golubev's help and the grandchildren his presence more than ever, and the anxiety about the grandchildren's future sparks a renewed will to live. Near the grandchildren, he even forgets his worries about the natural environment: 'Chernobyl and Vernadskii's noosphere no longer worried him, there was no time for them. He must live, survive.'¹²⁵ The river of life has won, and the flow of life must go on. Nevertheless, the reason for Golubev's renewed spark to live does not stem from a hope that people will find a balance with their environment. This is just the way human life is: the will to continue its river-like flow outcomes all, even ecology. Golubev experiences an ecological death as he becomes more worried about his descendants' immediate survival than the state of the environment and the long-term future of his grandchildren.

Conclusion

In Sergei Zalygin's *Ekologicheskii roman*, meanings of the river are central to the depiction of changes in geographical thought in Russia through the twentieth century. The prologue equates the river current to the flow of life and presents humanity as a product of the river, while in the end the poisoning of the Pripjat by radionuclides is a dystopian result of the lost geographical understanding of people and rivers constituting one harmonious whole.

The novel depicts Andrei Grigor'ev's geographical understandings, based on dialectical materialism, as the prevailing view of the Soviet state authorities in the 1940s and early 1950s. In the episodes 'Zolotaia rybka' and 'Piat'sot pervaiia stroika', the state representatives concentrate on achieving a victory over nature, leaning to war rhetoric that connects to victories over Nazism and American imperialism. Grigor'ev's views thrived in Stalin's period, because they responded to the state's modernization

goals better than Lev Berg's landscape science. The novel depicts the erosion of Grigor'evian views in the early 1960s in the episode 'Nizhne-Obskaia GES' by showing how the state authorities decide to cancel the construction of a hydropower station in the Arctic. However, even though views that resonate with a new kind of environmental thinking are stated as the reasons for the abandonment of the project, Zalygin's novel depicts these reasons as superficial. The real reasons are political, and the Grigor'evian thinking of the authorities has not changed.

However, the protagonist Golubev's geographical thinking has evolved, and it is now compatible with Berg's landscape science. As Golubev is an *alter ego* of Zalygin, who was a prominent character in the Soviet environmental movement, the novel associates the movement as a proponent of Berg's geography. This association develops further during the 1960s in the episode 'Nil – sviashchennaia reka', which depicts the river and the human community as one harmonious whole, in line with Berg's landscapes. For Golubev, Egypt is a place, where natural and cultural landscapes coexisted in harmony and had never been two separate realms until the Aswan High Dam was built with Soviet aid. In the novel's final episode, '+30', it becomes clear that the Grigor'evian notion was guiding the environmental understanding in Russia still in the 1980s–1990s. In the novel, the state's failure to return to Berg's geography, free of ideological combats, and understand Vladimir Vernadskii's concept of the noosphere lead to the catastrophic nuclear accident in Chernobyl, which is a manifestation of the dystopic modernity in the age of the Anthropocene.

By poisoning the Pripyat, the accident – and therefore modern ideology-driven geography – has turned the 'river of life', which gave a new birth to the protagonist in his childhood, to the 'river of death', which drives him self-destructive. In Golubev's intended farewell letter to his son, the frustrated old 'riverman' compares humanity's

actions against nature to those of the Soviet state against the Gulag prisoners and wonders why do we do so: ‘why do we not recognize that we also environ nature, only in a much more hard and cruel way than it us?!’¹²⁶ Golubev has no answer.

The protagonist Golubev is a complex character, and a combination of many discourses. He is not just a hydrologist and an environmentalist, but also avidly keen on geography and, as Zalygin’s *alter ego*, represents writers’ point of view too. This versatility of the protagonist fits and might even be the origin of the novel’s complex genre, a mix of conventional literary genres. Complex problems call for complex representation.

Acknowledgements

The work on this publication started as a part of the research project *AQUA – Water as Social and Cultural Space*, funded by the Academy of Finland and led by Arja Rosenholm at Tampere University. This work was also supported by the Emil Aaltonen Foundation and the City of Tampere Science Fund. The first version of this work was presented in the second workshop of the project *Water, Culture, and Society in Global Historical Perspective*, organized by Nicholas Breyfogle and Philip Brown in July 2017 at the Ohio State University.

Disclosure statement

No potential conflict of interest was reported by the author.

Notes

1. Zalygin, “Interv’iu u samogo sebia,” 15.
2. Clowes, *Russia on the Edge*, xi, 2.
3. For example, Clowes, *Russia on the Edge*; Dobrenko and Naiman, *The Landscape of Stalinism*; Ely, *This Meager Nature*; Layton, *Russian Literature and Empire*; Widdis, *Visions*; and Widdis, “Russia as Space.”
4. Marland, “Ecocriticism,” 846.
5. Gribov, “Krutymi tropami.”
6. See Ely, *This Meager Nature*.
7. Cf. Clowes, *Russia on the Edge*, 2, 4.

8. Kerridge and Garrard, "Call for Proposals," para 3.
9. Garrard, *Ecocriticism*, 6.
10. See Kelly et al., *Rivers of the Anthropocene*; and Oppermann and Iovino, *Environmental Humanities*.
11. Ostaszewska, "Chelovek i priroda," 47.
12. Filippova, "Utopicheskii vektor naturfilosofskoi prozy," 17, 20.
13. Rudziewicz, "Ekologicheskaiia problematika," 70–71.
14. Cf. Perkiömäki, "Matka hukutetulla joella"; and Perkiömäki, "'The Sovereign'."
15. "Chelovek, kotoryi spas Ob'."
16. Most notable include Zalygin, "Voda i zemlia Zemli"; Zalygin, "NTR i literatura"; Zalygin, "Literatura i priroda"; and Zalygin, "Voda podvizhnaia, voda nepodvizhnaia."
17. See Karpenko and Merinov, "Ekologicheskaiia problematika," 134–36. The Northern river reversal was a large-scale utopian Soviet project, whose objective was to turn the flow of the Siberian and other northern rivers southward to divert fresh water to the arid Central Asian steppe. A whole system of project-institutes worked on preparing and documenting the plan for decades since the 1950s. The project never started, and it was abandoned in 1986. See Vorobyev, "Ruling Rivers." Gorbachev acknowledges Zalygin's key role in the abandonment of the project. "Chelovek, kotoryi spas Ob'."
18. Smith and Rich, "Sergei Zalygin," 121.
19. See note 15 above. Sergei Zalygin also describes his numerous meetings with Gorbachev and the leader of the Ideological Committee of the Communist Party, Vadim Medvedev, along the publication process of *The Gulag Archipelago*. While Zalygin initially wanted to publish Solzhenitsyn's works in chronological order, the writer himself insisted on publishing *The Gulag Archipelago* first, because he considered it his most important work. Gorbachev and Medvedev yielded to the publication of *The Gulag Archipelago* only after Zalygin threatened to resign from his post as editor-in-chief of *Novyi mir*. Zalygin, "Zametki, ne nuzhdaiushchiesia v siuzhete," below the subtitle 'Publikatsiia Solzhenitsyna'; see also Smith and Rich, "Sergei Zalygin," 121.
20. *Pravda*, August 31, 1973. The letter was a reaction to support the condemnation of Andrei Sakharov by members of the Academy of Sciences of the USSR in *Pravda* two days earlier. It equated Solzhenitsyn with Sakharov: 'the behaviour of people like Sakharov and Solzhenitsyn, who slander our political and social systems and try to raise distrust towards peaceful politics of the Soviet state, actually provoking the West to continue the Cold War, cannot evoke any other feelings but deep disregard and condemnation' (translation mine). It is not clear whether all the writers really gave their full permission to sign the letter, which was written and published in only a couple of days.
21. See note 18 above.

22. Parthé, *Russian Village Prose*, xii–xiv, 92–98.
23. Zalygin, “Povorot. Uroki odnoi diskussii”; and Zalygin, “A chto zhe dal’she?”
24. Zalygin, “Zametki, ne nuzhdaiushchiesia v siuzhete”; and Razuvalova, *Pisateli-derevenshchiki*, 278–79.
25. Parthé, *Russian Village Prose*, 175–76.
26. Rudziewicz, “Ekologicheskaiia problematika,” 69.
27. Zalygin, “Rossiia podymetsia,” para 36; and Zalygin, “My v zerkale iskusstva.”
28. Rudziewicz, *Chelovek i priroda*, 296.
29. Zalygin, “Ekologicheskii roman,” 5. All the translations from Zalygin’s works are my own.
30. Ibid.
31. Ibid.
32. Ibid., 6.
33. Ibid.
34. Ibid.
35. A ship canal, also known as the Belomor Canal, which connects the White Sea with the Baltic Sea. It was constructed by forced labour, opened in 1933, and exalted by a host of literary works of the time. See Ruder, *Making History for Stalin*.
36. Zalygin, “Ekologicheskii roman,” 67.
37. Dobrenko, “The Art,” 190–92.
38. See note 36 above.
39. Shtil’mark, “The Evolution,” 430–33.
40. Zalygin, “Ekologicheskii roman,” 83. Curiously, Andrei Platonov, who also was a hydrologist and a well-known Soviet-era Russian writer on the relationship of culture and nature, is never mentioned in the novel.
41. Ibid., 70.
42. Ibid., 91.
43. Ibid., 92.
44. Ibid., 91.
45. Perkiömäki, “Matka hukutetulla joella.”
46. Slavnikova, “Staryi russkii,” paras 18, 21.
47. Zalygin, “Ekologicheskii roman,” 68.
48. Ibid., 9.
49. Ibid.
50. Ibid., 10.
51. Ibid., 15.
52. The Russian proverb ‘*voina plan pokazhet*’ (‘war will show the plan’) reflects this attitude, meaning that you do not have to plan things ahead – just take up the fight and act

instinctively. A war-time slogan, 'voina vse spishet' ('war writes everything off') is mentioned in Zalygin's novel. The English equivalent, 'the end justifies the means', lacks the war rhetoric of the Russian version.

53. Ushakov, *Tolkovyi slovar' Ushakova*.
54. Zalygin, "Ekologicheskii roman," 68.
55. Razuvalova, *Pisateli-'derevenshchiki'*, 279.
56. Zalygin, "Ekologicheskii roman," 20.
57. See Ilin, *New Russia's Primer*.
58. Gor'kii, "O bor'be s prirodoi."
59. Josephson et al., *An Environmental History*, 119–21.
60. Oldfield and Shaw, *The Development*, 90–91.
61. Stalin, "O dialekticheskom," 255.
62. Weiner, *Models of Nature*, 234.
63. Stalin, "O dialekticheskom," 254.
64. Oldfield and Shaw, *The Development*, 94.
65. Zalygin, "Ekologicheskii roman," 20.
66. Ibid.
67. Chilikin's model is the engineer Aleksandr Chemin. He worked in the Hydroproject Institute, which was responsible of all the hydropower plant projects in the Soviet Union. In his 1962 critical essay about the lower Ob hydropower station, Zalygin quotes Chemin's words, which are repeated in the novel: 'We flew by an airplane over the future reservoir, and in front of us was drawn a view...' Zalygin, "Lesa, zemli, vody," 15. In the novel, the sentence continues: '...of modern socialist cities on the banks of the artificial sea.' Zalygin, "Ekologicheskii roman," 41.
68. The third Program of the Communist Party of the Soviet Union mentions hydropower projects only on the Angara and the Yenisei. It is unclear whether Zalygin uses here artist's freedom or the mention is in another document related to the Party Program. He refers to the Program in a similar way also in an essay describing his real-life meeting with the engineer Chemin. Sergei Zalygin, "Zametki, ne nuzhdaiushchiesia v siuzhete. Prodolzhenie," paras 19–23.
69. Ibid.
70. Zalygin, "Ekologicheskii roman," 28.
71. Ibid., 31.
72. Ibid., 41.
73. Ibid., 53.
74. Zalygin's characters use the word 'conservative' as a negative expression. Many Village Prose writers have faced accusations of being 'conservative'. It is a question worth asking,

although not in the scope of this article, whether, and why, environmental writing in Russia is connected to conservative ideologies. One could argue that ‘liberal’ ideologies might also unwillingly encourage people and societies for less ecological practices, as Timothy Clark hints: ‘ecocritics should become more forthright in highlighting the destructive implications and assumptions of given critical schools (whether historicist, formalist, postcolonial or, indeed, many others).’ Clark, *Ecocriticism on the Edge*, 219. Zalygin has advocated for a ‘reasonable conservatism’ (*razumnyi konservatizm*) as a sound ideological base for modern ecology. Zalygin, “‘Ekologicheskii konservatizm’,” para 31.

75. Oldfield and Shaw, *The Development*, 80.
76. *Ibid.*, 82.
77. *Ibid.*, 78.
78. Gurlenova, “Chuvstvo prirody.”
79. Oldfield and Shaw, *The Development*, 82–83.
80. *Ibid.*, 95, 98.
81. *Ibid.*, 99.
82. *Ibid.*, 94.
83. Kaminskii, “Filosofiiia prirody,” 124.
84. Zalygin, “Ekologicheskii roman,” 3.
85. Zalygin, “Voda podvizhnaia, voda nepodvizhnaia,” 49.
86. Zalygin, “Literatura i priroda,” 12.
87. Zalygin, “Ekologicheskii roman,” 8.
88. *Ibid.*, 36.
89. *Ibid.*, 40.
90. *Ibid.*, 38.
91. The original articles are: Zalygin, “Les, zemli, vody”; Zalygin, “Les, zemli, vody i vedomstvo”; and Zalygin, “Delo narodnoe, a ne vedomstvennoe!”
92. *Ibid.*, 24.
93. “Programma Kommunisticheskoi Partii Sovetskogo Soiuza.” Translation of this phrase in Oldfield and Shaw, *The Development*, 149.
94. Josephson et al., *An Environmental History*, 143.
95. They even call the Nile a ‘Marxist river’. Zalygin, “Ekologicheskii roman,” 47.
96. *Ibid.*
97. Oldfield and Shaw, *The Development*, 82.
98. Zalygin, “Ekologicheskii roman,” 51.
99. Evtushenko’s poem *Bratskaia GES* (‘The Bratsk Station’, 1965) equates the huge hydropower station in Bratsk to the Egyptian pyramids. Unlike the pyramids,

- Evtushenko's power plant is built by enthusiastic workers who devote themselves to socialism. See Marsh, *Soviet Fiction since Stalin*, 45.
100. The title of the episode, '+30', might refer to the Chernobyl Exclusion Zone, the evacuation area of a thirty-kilometre radius designated around the remains of the exploded reactor. It probably alludes even more to Golubev looking back to the last thirty years of his life in the age of eighty, and the sudden will at the end of the novel to keep on living.
101. Neither was purely Russian. Vernadskii's father was a descendant of Zaporozhian Cossacks, and he is widely recognized as a compatriot in both Russia and Ukraine, while Stalin was from Georgia. Their influence on Russian environmental thinking was, however, great.
102. Zalygin, "Ekologicheskii roman," 70.
103. Zalygin, "Razumnyi soiuz s prirodoi," 52.
104. Zalygin, "Ekologicheskii roman," 76.
105. Vernadskii, "Scientific thought," 95.
106. Literally 'last' in the translation, but 'latest' is more apt. Oldfield and Shaw, "V.I. Vernadsky," 147.
107. Vernadskii, "The biosphere," 99–100.
108. Crutzen and Stoermer, "The Anthropocene."
109. Steffen et al., "The Anthropocene," 843–45.
110. Oldfield and Shaw, "V.I. Vernadsky," 148–49.
111. Zalygin, "Ekologicheskii roman," 76.
112. In 1984, Dmitrii Likhachev coined the term *gomosfera*, 'the homosphere', as an extension to Vernadskii's noosphere with an emphasis on humanity's agency. Likhachev, *Russkaia kul'tura*, 92.
113. Kaminskii, "Filosofiiia prirody," 121; and Zalygin, "Pochva, na kotoroi stoim," 200.
114. Zalygin, "Ekologicheskii roman," 83 (emphasis mine).
115. Vasilii Dokuchaev, Dmitrii Mendeleev, Nikolai Mikloukho-Maklai, Mikhail Pevtsov, Nikolai Przheval'skii, Petr Semenov-Tian-Shanskii and Aleksandr Voeikov. To Golubev's amazement, Vernadskii is not there. Zalygin, "Ekologicheskii roman," 86–88.
116. Zalygin's original title of the novel was 'Zakoldovannyi stvor' ('Enchanted river station'), referring to the place called Angal'sky Mys on the lower Ob near Salekhard, where he worked during the Second World War. Zalygin, "Zametki, ne nuzhdaiushchiesia v siuzhete."
117. Zalygin, "Ekologicheskii roman," 89.
118. Ruslan Khasbulatov, the last chairperson of the Supreme Soviet of the Russian Federation, which ceased to exist after the 1993 constitutional crisis.
119. Zalygin, "Ekologicheskii roman," 100.

120. Ibid., 97.
121. Zalygin, "Vmesto zakliucheniia," 282.
122. Rudziewicz, "Eticheskaia napravlennost'," 193.
123. Ostaszewska, "Chelovek i priroda," 45.
124. Zalygin, "K voprosu o bessmertii," 45.
125. Zalygin, "Ekologicheskii roman," 106.
126. Ibid., 102.

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