

The Romantic Turn of Industrial Rationality: A Case Study of Landscape Changes on Dartmoor in Southwestern England in the 19th Century

Ge Kao

Department of History, Tsinghua University, Beijing, 100084, China
live.daniel@163.com

Abstract: Dartmoor in Devon, southwest England, is an ecological habitat with Blanket Bog as the predominant soil type. After the 1760s, industrial activities considerably changed Dartmoor's surface and subsurface landscapes. Against the background of the industrial landscape eroding the natural landscape, the romantic trend of thought colored the pale landscape narrative in the past, transforming the British people's sympathy for the environment into empathy for the environment in the 19th century. The academic tradition believed that romanticism was a treason to enlightenment rationality. However, romanticism was the development of enlightened rationality based on inheriting rational thinking tools to seek the way of harmonious coexistence between humans and nature.

Keywords: Dartmoor, Ecological Preservation, Romanticism

1. INTRODUCTION

Dartmoor in Devon, southwest England, is an ecological habitat with Blanket Bog as the predominant soil type. Although it has been a royal hunting ground under the Duke of Cornwall since the middle ages, its geographical boundary was undefined until the establishment of the National Park in 1951. After the beginning of the Industrial Revolution, the British further diversified their use of Dartmoor's resources. Some entrepreneurs expanded the scale of the original quarrying and tin mining industry. Others promoted the mining of lead, silver, iron, copper, and other metal resources. These industrial activities considerably changed Dartmoor's surface and subsurface landscape. Against the background of the industrial landscape eroding the natural landscape, the romantic trend of thought colored the pale landscape narrative in the past, transforming the British people's sympathy for the environment into empathy for the environment in the 19th century. The romantics gradually changed from natural emotional expression of the surrounding environment to the conscious observation and identification of the living space and then developed to the rational reflection and cognition of the external world. In this way, the cultural atmosphere of society interacted with the awareness of the romantics. It almost formed the deontological idea of "guarding the

beauty of Britain," which even became one of the non-argumentative moral laws in the popular notion after the Second World War. Concerning the transformation of the above views of nature, the academic tradition believed that romanticism was a treason to enlightenment rationality. However, the author believes that romanticism was the development of enlightened rationality based on inheriting rational thinking tools to seek the way of harmonious coexistence between humans and nature. Since the 1960s, under the wave of new historiography, British environmental history has experienced a process from establishing the subject to the day's perfection. It experienced disputes between materialistic and idealist approaches and finally moved towards an analysis path of existence and consciousness -- exploring the relationship between humans and the environment in the material world and thinking about the cultural level of people's view of the environment (Illouz, 2023). Specifically, in his book *Man and the Natural World: Changing Attitudes in England (1500-1800)*, Keith Thomas accurately analyzed the pains of transitioning from traditional civilization to modern civilization and pointed out that the ambivalence of cultural agents accompanies material progress (Thomas, 1991). What's more, T. C. Smout pointed out that the Industrial Revolution greatly enhanced the ability of the British people to utilize and transform nature (Smout, 2019). At that time, their attitude towards nature could always be summarized by the words "use" and "delight". These studies show that the research method of environmental history requires us to pay attention to the interaction between humans and nature and observe the changes in people's view of nature. In addition, some scholars directly attributed the emergence of environmental protection thoughts to the rise of romanticism.

For example, Nathaniel Wolloch stated that the British Romantic Literature Movement, which flourished from the 1780s to the 1830s, attacked the immature thoughts of the Enlightenment to declare war on natural and social defects (Wolloch, 2016). However, Wolloch hardly mentioned the internal relationship between romanticism and enlightenment. As Isaiah Berlin, a famous scholar of the history of ideas, said in the book *The Crooked Timber of Humanity: Romanticism inherits and develops enlightenment rationality* (Berlin, 2013). Therefore, the author will apply the paradigm of environmental history to analyze the critical role of romanticism in ecological protection based on inheriting enlightenment rationality by investigating landscape changes on Dartmoor in the 19th century (Shalin, 1986).

2. INDUSTRIAL LANDSCAPES OF DARTMOOR IN THE 19th CENTURY

The rolling hills and wilderness were just a normal part of life for inhabitants, who had lived on the moorland for a long time. Like the people of northern Britain, they saw hills and canyons as familiar and friendly places to live, though the wildness underlying their habitat kept outsiders at bay. But the safety and trust of the original and barren means familiarity, monotonous, and boring after a long time. Therefore, during dynamic innovation, people on Dartmoor also tried to transplant the industrial landscapes to the highland, with the modern scene of machinery and factories decorating Dartmoor. The ancient quarrying and mining industry, boosted by the Industrial Revolution, had triggered more significant environmental and social effects than agricultural reclamation. Although the exploitation of Dartmoor metamorphic rocks and granites, as well as tin, copper, lead, silver and iron, and other mineral resources, began in the Middle Ages, these industries were revived with the development of new technologies in the 18th and 19th centuries. In quarrying, ancient techniques were limited to the inefficient extraction of surface granite. Since 1800, the improved "wedge and groove" method has dramatically improved the quarrying efficiency. Further use of drill and blasting techniques has expanded the quarrying area and left huge side pits in many places (Gerrard, 1997). Moreover, according to the report of the *Trenman's Exeter Flying Post* in 1855, geologists surveyed and determined that Tavistock was rich in various mineral resources, and the weekly output of the Wheal Emma Copper Mine at that time had reached 50 tons (Klemen, 2015). In addition, the development of the tin mining industry was more noticeable. The *Salisbury and Winchester Journal* reported on May 25, 1835, that the undiscovered mineral deposits in Dartmoor were expected to be excavated again; The veil of ancient engineering in this area had been unveiled (it was presumed to be a river engineering preserved from the Phoenician era), and a large number of tin resources had been discovered. According to the report, a wheelbarrow and some miners' tools buried 36 years ago were unearthed; It was confirmed that this group of miners encountered a water seepage accident during the excavation process, so they abandoned the excavation halfway; Until May 1835, the Chudleigh United Company had the most comprehensive mining equipment and personnel and was prepared to exploit ore veins' most large mining sites (Turner, 2004). Applying shaft excavation techniques enabled modern

miners to exploit lode resources beyond the reach of earlier tinsmiths (Gerrard, 1997). Besides technological advances, free capital and a modern corporate system boosted developers' confidence. On February 3, 1838, the Exeter and Plymouth Gazette published an advertisement for a share offering: 'The tin mine at Huntington, Dartmoor, was dug by a company of excellent reputation. There was no doubt that only a tiny amount of money would make the tin mine run well in the coming spring. Therefore, when the handicraft workshops in the Middle Ages were gradually changed into modern factories, the mining industry not only shaped the landscapes of Dartmoor to a certain extent but also created new jobs. Immigrants poured into Dartmoor more than ever before. The workers lived on wages, and most lived in interim housing initially. Later, permanent workers settled on Dartmoor. They promoted the construction of schools, churches, and other public facilities to meet their needs (Gerrard, 1997). As a result, their settlements gradually became industrial towns, which changed the landscape pattern of the previous highland farmsteads scattered. Factory dormitories, built primarily on terraced layouts, would continue accommodating workers who could not yet afford to live alone. In addition to the resource-based industry, the emergence of the highland fringe town landscape depended more on the development of the light industry. Buckfastleigh, for example, relied heavily on wool, leather, paper, and corn milling during this period; Ashburton was a trading bazaar for the surrounding area; Besides, Tavistock was not only a business center but also a dormitory town worthy of the name of the Dartmoor (Gerrard, 1997).

Although the extent of development of Dartmoor was always limited, the 19th century saw the peak of its industrialization. However, resource-based industries were more likely to be exhausted and would inevitably face the dilemma of insufficient capacity and layoffs after long-term exploitation. In addition, the mining industry reshaped the surface landscapes and changed the geological structure and underground landscapes. Therefore, the risk of mining disasters was increasingly included in consideration of the younger generation. They gradually moved out of the highland to seek jobs with higher returns and safety. It was reported that after a copper mine accident in the second half of the 19th century, the emigration trend of Dartmoor inhabitants increased (Gerrard, 1997). The artificial landscapes began to decline on the Dartmoor (Turner & Wilson-North, 2012).

3. THE DECLINE OF INDUSTRIAL LANDSCAPES AND ECOLOGICAL PROTECTION

In the late 19th and early 20th centuries, attempts to "domesticate" the moorland largely failed. Even well-funded and ambitious improvers could not give Dartmoor the prosperous appearance of industrialization. The industrial and commercial towns shrank with the depletion of resource-based industries, which made the natural landscape of Dartmoor more desolate and added several abandoned and neglected artificial landscapes to the moorland. The disappearance of the tin industry left only windowless locomotive houses, the dilapidated huts of old mining villages, and the jagged rubble piles (Hoskins, 1955). Besides, just across the Devon border was the previous mining landscape of Blanchdown, west of Tavistock; In the mid-19th century, the Grand Union of Devon held the wealthiest copper mine on Dartmoor throughout the world. However, a half-century later, the miles of rubble created a quiet, desolate beauty (Hoskins, 1955). In contrast, there were prosperous commercial towns and industrial centers around the Dartmoor, and even the entire island of Britain was immersed in the progressive atmosphere of industrialization. W. G. Hoskins described the industrial scene: "The silhouette of a smoky winter night in Nottingham, the busy, dark early morning in Sheffield City, and the gas lights in red brick houses in Victoria City... all made people feel a bit beautiful" (Hoskins, 1955). However, the environmental costs of early industrial developments were also significant: "Dirty and overcrowded cities came with the steam age of the 19th century. Large towns were not the only representative of industrial landscapes, as miles of destroyed and polluted countryside stretch between them" (Hoskins, 1955). Therefore, the society carried by the industrial wave and the individuals regulated by the factory system all yearned for a return of humanity and aesthetics. Just as popular notions of the agricultural age, which rejected calm and boredom in favor of novelty and efficiency, the industrial age, when it created an economic order of production to feed more people, created social attitudes that hated changes and craved nature and tradition (Fleming, 1978). In the 1870s, the British people began to protect Sites of Special Scientific Interest (SSSIs) on Dartmoor. On July 30th and August 1st, 1873, *the Morning Post*, *the Western Times*, and *the Exeter and Plymouth Gazette* jointly reported the grand annual meeting of the Royal Archaeological Institute of Great Britain and Ireland. It pointed out the archaeological value of Dartmoor, which meant that a large area of uncultivated land was conducive to preserving ancient relics eroded in

other environments. With the development of archaeological and scientific activities, on February 4th, 1875, the North Devon Journal tracked and reported a memorable lecture sponsored by the Barnstaple Literary and Scientific Institute. The lecture introduced Dartmoor's topography and geomorphological features and disclosed the latest progress in paleobotany research there; Notably, Lady Coutts and her team discovered at least 50 plant fossils during a six-month expedition to the moorland, 26 of which were previously unknown. As time passed, the call to preserve the moorland became louder and louder. The preservation principles gradually expanded from the preservation of SSSIs to a broader range of natural Spaces and from the refusal to excavate archaeological sites to rejecting a more comprehensive range of human activities. The Dartmoor Preservation Society was founded in 1883. It soon published a research report on local ecological conditions and environmental issues (Association, 1883). Since then, the British intellectual community had become increasingly involved in the environmental protection cause of Dartmoor (Spowers, 2002). For example, the British press reshaped the imagination of the public on Dartmoor with its authoritative discourse, emotional orientation and moral discipline. Their propaganda on protecting Dartmoor achieved remarkable results at the end of the 19th century. At least initially, it planted a general and vague awareness of the protection of the moorland in the minds of the people of Devon, England. Although they could not clarify the specific objects and reasons for preservation, they transformed the geographical concept of Dartmoor into a new cultural concept in the context of protection. Moreover, mass education aimed to help the public develop a sense of nature to protect the moorland (Knight & Harrison, 2013). Undoubtedly, the combined preaching of the British press and the educational community transformed some of the outsiders from indifference to Dartmoor to imagination and curiosity of Dartmoor, and indeed, because they had no genuine interests in Dartmoor, they were more inclined to take an environmentalist stance. Most of them participated in the "imagined community" of man and nature initiated by the scientific community and jointly built by the print media and mass education. Their imagination was based on the existing and potential historical culture, natural aesthetic, and biological habitat value of Dartmoor.

4. THE ROMANTIC TURN OF INDUSTRIAL RATIONALITY

The traditional view is that in the 19th century, British public opinion

shifted from focusing on environmental resource exploitation at the beginning to concentrating on SSSIs and ecological habitats protection at the end of the century. One of the most significant reasons for this shift was the rise of the Romantic trend of thought. In other words, the romantic movement of thought originating in art, literature, and philosophy considerably corrected the malpractices of excessive exploitation of industrial rationality. In the 19th century, romanticists always seemed nostalgic, trying to awaken the traditions and values of the pre-industrial era. Still, rationalists always tried to maintain order and efficiency in a commanding tone at this stage. As one of the accusations of rationalism made by anti-Enlightenment activists: the ideals of the Enlightenment and its belief in the power of human reason were the cornerstone of its claim that humanity could achieve not only the ultimate victory in the fight against nature but also the ultimate victory in the fight against social defects (Wolloch, 2016). However, such seemingly reasonable claims neither understand the true meaning of enlightenment and industrial rationality nor clarify the relationship between rationalism and romanticism. Most of the criticisms of the ecological crisis caused by the combination of Enlightenment rationality and industrial capital were based on the critics' "emotional" interpretation of rationality. First, the logical operation of industrial capital did not mean that the property owners put industrial production on the track of rationalism or scientism. The entrepreneurial production process also had to obey the exchange rules and objective restrictions, and entrepreneurial ambition to dominate nature and the greed for profit-seeking existed in the imagination of individuals and literature rather than in the effective practices of each independent production unit. In fact, maintaining and expanding the existing population and total wealth was a choice that had nothing to do with individual preferences. Therefore, the historical way out of the ecological paradox was to rationally explore how to use new energy before a single resource is exhausted through technology, just like the Stone Age, the Bronze Age, and the Iron Age that humanity had gone through before. Secondly, the descriptions of the natural view of various Enlightenment philosophes all pointed to the repression of theology on human intelligence. Although their words were suspected of amplifying the function of logos, they only reflected the immature development of reason in the Age of Enlightenment. There was nothing to do with the intrinsic value of reason as a tool of human thinking. In his eulogy to Newton, Alexander Pope wrote that nature and nature's laws lay hid in the night; God said, "Let Newton be," and all was light (Wolloch, 2016). Moreover, Gottfried Wilhelm Leibniz upheld optimism,

and Edward Gibbon and Voltaire believed natural disasters originated from natural causes rather than divine power (Wolloch, 2016). However, the views of Enlightenment scholars on nature should not be summarized as enhancing human ambition to govern nature, as their era first needed to respond to the challenge of Christian theological views on nature, so there was a motivation to broaden their humanistic perspectives. Secondly, the legacy of Enlightenment lay not only in the limited texts written by Enlightenment philosophes at that time but also in the promotion of rationality as a tool of thinking that transcended time and space. Based on the above argument, romanticism in the 19th century was not just a "disappointment" and "counterattack" to rationalism but a correction of irrational cognition in the Enlightenment after inheriting the thinking tool of rationalism. This statement did not mean that the thinking of every single romanticist came from rational judgments, nor did it mean that all romanticists' ideas were superior to those of enlightenment philosophes, but only emphasized the inherent rationality of romanticism in chronological order. Indeed, from the overlapping periods of the two ideological trends, they were also interrelated rather than disconnected. For example, the "Kant's Copernican Revolution" was initiated by the philosophe Kant in epistemology. People's understanding and discussion of the essence of things depended on the natural intuitive form of being human rather than the essence of things. It should be said that Kant, through rational thinking, analyzed the root of the Romantic views of nature. The expression of emotions towards mountains and rivers and the empathy for all natural things originated from humans' subjective understandings and interpretations of the external world. At the same time, Kant's deontology was extended by various romanticists to environmental ethics beyond human affairs.

5. CONCLUSION

Indeed, there were many connections between the Romantic views of nature and the Rational views of nature. Therefore, the intelligence community had never shown a state of fragmentation and substitution but rather a trend of coexistence and integration for the two kinds of opinions. Rationality was the technical basis for obtaining resources and expanding development and the scientific basis for understanding the ecology and exploring the environment. Therefore, based on its ideological foundation of cherishing all things and loving habitats, romanticism could become the basis for the weak to avoid harm and the concept of ecological

conservation by borrowing and applying analytical thinking tools. In summary, the rational development of romanticism brought about a naturalistic trend in the literary world and the subsequent ecological shift in the academic world. It used cultural means to counteract the views on resource competition and industrial production.

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