

## Rational Romanticism: AI-Inspired Analysis of Logical Equilibrium in Coleridge's *The Rime of the Ancient Mariner*

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### Abstract

In *The Rime of the Ancient Mariner*, Coleridge shows how the fundamental balance among Reason, Spirit, and Nature can be broken and gradually restored. After killing the Albatross, the Sailor suffers deep guilt and learns, through his suffering and his reflection, that only sensitivity, reflection, and respect for nature allow us to find inner harmony. The present paper aims to explore the dynamic interaction among the three fundamental components of the poem: Reason, Spirit, and Nature. The study adopts an interdisciplinary approach, combining traditional literary analysis with quantitative techniques inspired by artificial intelligence to explore the dynamic modalities of human equilibrium in Samuel Taylor Coleridge's work and to highlight the interaction among Reason, Spirit, and Nature through the poem's narrative progression from the initial transgression to the final reconciliation. The analysis reveals that at the beginning of the story, the imbalance is mainly attributable to Reason (around 70%), marking a failure of judgment. During the "Curse" section, however, the crisis shifts, and the Spirit and Nature components dominate, reaching up to 85% of the disorder, illustrating the environment's emotional horror and hostility. These observations confirm that human balance is restored only when Reason, Spirit, and Nature progress together, a dynamic that detailed studies can follow with notable precision (up to 90%), as validated by adjustment measures such as  $R^2$ , RMSE, and MAE.

**Key Words:** Artificial Intelligence (AI), Coleridge; Human balance, Nature, Reason, *Rime of the Ancient Mariner*, Romanticism, Spirit

### 1. Introduction

*The Rime of the Ancient Mariner* by Samuel Taylor Coleridge has captivated scholars for centuries; his unique style in transforming the supernatural into natural, creating an atmosphere of mystery, imagination, and the sublime, was particularly interesting. The poem tells the story of an old sailor who condemned himself to narrate his story to every man as a sort of perpetual punishment after killing the innocent Albatross. The Mariner does not realize the atrocity of his act until he undergoes nature's revenge, feeling guilty and ashamed of his crime; he continues to share his story with others, becoming a sort of mediator between nature and humanity. Robert Penn Warren (1969) describes the poem as a fairytale, a story of wrongdoing, punishment, remorse, and forgiveness in its most basic form. Coleridge's intimacy with nature, his investigations into the supernatural and imaginative world and his deep reflection on the romantic spirit of the poet's poem reflect the poem's romantic spirit. He made significant contributions to the development of Romantic literature that will continue to inspire and motivate scholars today. Before engaging with Romanticism as a literary movement, it is necessary to first shed light on the Enlightenment, which greatly influenced the emergence of the Romantic era. As an intellectual movement, the Enlightenment revolved around the central belief that reason should serve as the primary basis for understanding the universe. Wu (1999) maintains that everything was expected to be evaluated and interpreted in the light of reason, and that efforts were made to structure and classify nature and society in a systematic way (p.

39-40). Hence, nature was regarded as an object that could be explored and demystified through rational inquiry. In the same context, the role of language was also defined in relation to reason. If language appealed to the higher faculties of the human mind regulated by reason, it was considered referential; however, if language engaged with sentiments or imagination, it was perceived as inferior because it drew on what Enlightenment thinkers considered the lower capacities of the mind. (John Locke, 1999).

In this respect, the Enlightenment philosopher David Hume (2001) shows a hierarchical connection between feeling and reason, on the one hand, and between imagination and reason, on the other when saying:

Those who found morality on sentiment, more than on reason, are inclined to comprehend ethics under the former observation, and to maintain that, in all questions which regard conduct and manners, the difference among men is really greater than at first sight it appears. It is indeed obvious that writers of all nations and all ages concur in applauding justice, humanity, magnanimity, prudence, veracity, and in blaming the opposite qualities. Even poets and other authors, whose compositions are chiefly calculated to please the imagination ... to inculcate the same moral precepts, and to bestow their applause and blame on the same virtues and vices. (p.486)

This quotation exemplifies the Enlightenment spirit, which is built upon binary oppositions. The author combines morality with reason and then demonstrates that poetry has nothing to do with reason because it appeals only to 'lower' faculties of the human mind, namely, imagination and sentiment. This view, based on strict dichotomies and logical commitments, created a huge gap between man and nature, which eventually paved the way to the rise of Romanticism.

One of the key aspects that the Romantics criticized in the Enlightenment is the dismissal of the mind's creative power (imagination). This viewpoint aligned with Emmanuel Kant's (1781) notion of the human mind's creative role in creating knowledge, in contrast to Locke and Hume. Kant believed in the limitations of the human mind and gave significant consideration to its artistic imagination (p.489). This emphasis resonates deeply with Romanticism, which relies on the mind's imaginative power in its writings. Kant's influence on Romantic writers is most evident in Coleridge's *Biographia Literaria*, where he divides the powers of the human mind into fancy, primary imagination, and secondary imagination, echoing Kant's categories of reproductive imagination, productive imagination, and aesthetic imagination (Wu, p. 34). The Romantic thinkers also contest the Enlightenment belief that nature is nothing more than an object to be explored and dominated by the human mind. Instead, they demonstrate a deep spiritual engagement with nature, placing it at the heart of human experience. From a romantic perspective, living in harmony with nature constitutes the essence of life, as demonstrated in the poem under study, where Coleridge consistently engages with nature as a living force capable of shaping human thought, emotions, and spiritual awareness. This balanced relationship between nature and the human experience reflects a better understanding of self and an intense sense of spiritual awareness.

## 2. Review of literature

Since its publication, *The Rime of the Ancient Mariner* has been interpreted through various intellectual paradigms and from different lenses. One of the prominent critics in Romantic literature studies, Elliot B. Gose Jr. (1972), suggests that the Ancient Mariner's journey is "emblematic of the Romantic urge to explore the eternal soul and the temporal emotions" (p.

244). Similarly, M. H. Abrams (1984) argued that Coleridge's verses reveal the marvels of wonder and mystery by exploring "the exoticism both of the Middle Ages and of the Orient" (p. 9). Duncan Wu (1999), in turn, reads the poem as "a story of damnation. It concerns a godless, arbitrary world in which disproportionate misery is dealt out to the suffering innocent" (p. 614).

Other interpretations adopted a more traditional theological direction; Guthrie (1898) asserts that the poem is written with "a deliberate religious purpose" by Coleridge, who was equipped with "the task of reconciling science, political liberty, and the 'Truth in Christ.'" (p.200). Similarly, in "'Old Faith Is Often Modern Heresy': Re-enchanted Orthodoxy in Coleridge's 'The Eolian Harp' and 'The Rime of the Ancient Mariner,'" Joseph McQueen (2014), maintains that the poem surpasses the limits of reason and naturalism, yet remains analyzable within a theological context (pp. 22–23). He further argues that *The Rime* belongs to "a larger poetic backlash against the mechanistic understanding of the world so common in Enlightenment thought" (p. 23). Likewise, Peter Kitson (1989) describes *The Rime* as "a poem of restoration" (p. 206), while A. W. Crawford (1919) examines it as an allegory depicting "human life as a Pilgrim's Progress" (p. 311).

From a psychoanalytic perspective, David S. Miall (1986), in "Guilt and Death: The Predicament of the Ancient Mariner," asserts that the poem's ending does not justify the Mariner's suffering, which "resists moral reading" (p. 653). Additionally, Satendra Singh and Abha Khetarpal (2012) shed light on the Mariner's mental stress under extreme pressure. They maintain, "the symbolism, the narration and the entire setting of the poem represents Post Traumatic Stress Disorder" (p.193).

More recently, the poem has been revisited through new theoretical frameworks, revitalizing its critical reception. In *An Ecocritical Study of S. T. Coleridge's "The Rime of the Ancient Mariner"*, Singh (2022) reexamines the poem from an ecocritical standpoint, arguing that killing the Albatross broke the bond between humanity and nature; this act invites natural disaster (p. 11). He notes, "everyone who violates the bond between nature and humanity is a criminal and will be punished just like the Ancient Mariner" (p. 17). Similarly, Das (2022) maintains, "the greatest ecocritical message that the poem delivers for twenty-first-century readers is that any injustice to the natural world invites the wrath of God and, consequently, retribution or nemesis" (p. 69).

Ezzeldin (2022) and Muskan & Hassin (2024) have expanded on the poem's psychoanalytic interpretations by exploring new dimensions. Ezzeldin (2022) analyzes the poem through the lens of trauma theory, highlighting that the Mariner is suffering from 'traumatic' memory (p.203) caused by the unbearable feeling of guilt for surviving a catastrophic event. She argued that this 'survivor's guilt' pushed him towards a conflict between his trauma and unharmed status (p.200), and made him see life as a continuous punishment that he must live with (p.204). Muskan and Hassin (2024), adopting a Freudian perspective, argue, "morality is the way to lead a life without creating any problems for others" (p. 19).

In his study "Explaining Explanation in S.T. Coleridge's *The Rime of the Ancient Mariner*," Seamus Perry (2025) adopted a philosophical-critical lens to approach the poem. He argued that the poem appears challenging for both rational and naturalistic understanding, but can be interpreted within a theological framework. According to Perry Coleridge intentionally blurs the boundaries between reason, faith, and mystery.

All the above-referenced research helped to better understand the poem through different lenses: oral, psychological, ecological, and philosophical. However, none of them has explored the dynamic interaction among the three fundamental components of the poem: Reason, Spirit,

and Nature. Building on this critical landscape, the present study offers a new approach to *The Rime of the Ancient Mariner* by focusing on these components to examine and model the dynamics of human balance in the poem. The research is conducted through an interdisciplinary methodology that combines traditional literary analysis with quantitative techniques inspired by artificial intelligence. In an attempt to bridge the gap between qualitative interpretation and computational modeling, the study aims to open new avenues for digital approaches to Romantic literature. It also aims to demonstrate that there is an intersection between Romanticism and Neoclassicism, or even between seemingly divergent aesthetic paradigms, through the interpretative lens of artificial intelligence, which can reveal hidden harmonies across historical and conceptual divides.

### 3. Methodology

This study adopts an interdisciplinary approach, combining traditional literary analysis with quantitative techniques inspired by artificial intelligence to explore the dynamic modalities of human equilibrium in Samuel Taylor Coleridge's *The Rime of the Ancient Mariner*. This research aims to highlight the interaction among Reason, Spirit, and Nature through the poem's narrative progression from the initial transgression to the final reconciliation.

#### 3.1 Qualitative analysis and components coding

The first step is a close reading and deep textual analysis to identify key moments in which reason, spirit, and nature interact or come into conflict.

- Each narrative section of the poem (such as Killing, Curse, Vision, Blessing, Return) is examined to determine the dominances and imbalances of the literary components.
- Conceptual coding is applied to transform qualitative observations into analytical variables: each component is evaluated according to its relative intensity or role in the dynamic narrative.
- This codification constitutes an abstract database, making it possible to quantify literary concepts otherwise difficult to measure, while preserving fidelity to the textual interpretation.

#### 3.2 Quantitative modeling with artificial intelligence

To complete the qualitative analysis, three types of machine learning models are used to capture and represent the progression of human balance:

##### 1. Linear Regression

- Models the linear relationship between the components (Reason, Spirit, Nature) and an overall indicator of balance.
- Provides a simple, interpretable, and robust approach to detecting general trends in the progression of the poem.

##### 2. Polynomial Regression

- Allows for the integration of non-linear variations between components and human balance, capturing gradual or abrupt changes in the narrative.
- Provides a continuous and smooth representation of complex interactions, useful for visualizing narrative transitions.

##### 3. Neural Networks

- Models non-linear relationships and subtle interactions between components.
- Provides additional flexibility for exploring complex patterns in text, although these models require sufficient data to avoid overfitting.

#### 3.3 Visualization and interpretation

The models are combined with graphic visualization techniques to make explicit:

- The relative evolution of each component over the course of the poem.

- The interactions between Reason, Spirit, and Nature in the overall dynamics of human balance.
- The narrative progression from initial imbalance to final reconciliation, using visual representations such as ribbon diagrams, curves, and stacked bars.

This approach allows us to highlight patterns invisible to the naked eye and to offer an objective, quantifiable reading of the poem's narrative and moral elements.

### 3.4 Methodological justification

The combination of qualitative and quantitative methods offers several advantages, such as:

- **Analytical rigor:** literary observations are systematically coded and measured.
- **Quantification of abstract concepts:** Reason, Spirit, and Nature become analytical variables exploitable by models.
- **Validation and reproducibility:** the results can be reproduced and compared using Machine Learning algorithms.
- **Dynamic visualization:** the interactions and the progression of the balance are made explicit through illustrative figures.

This hybrid methodology combines interpretive depth and scientific rigor, offering a solid framework for analyzing the poem and demonstrating the potential of artificial intelligence techniques in literary studies.

## 4. Results and Discussion

### 4.1 Analysis of Human Balance and Dynamics of Literary Components in *The Rime of the Ancient Mariner*

*The Rime of the Ancient Mariner* by Samuel Taylor Coleridge illustrates the complex journey of the human being between reason, spirit, and nature. The narrative progression, from the initial transgression (Killing) to the final reconciliation (Return), like a lead into the sea, shows how human balance is disrupted and then restored. The graphic analysis through six figures allows us to explore:

- The interaction between reason, spirit, and nature,
- The narrative progression of the poem,
- The comparison between the literary movements Romanticism and Neoclassicism,
- And the way in which these components contribute to human balance.

Each figure highlights a particular aspect of this dynamic, allowing an in-depth understanding of the text and its philosophical and literary implications.

#### Figure 1: Human Equilibrium

The first figure illustrates the fundamental concept of human balance, grounded in the harmonious interaction among reason, spirit, and respect for nature. In the context of the poem, the narrative progression from Killing

*'With my crossbow*

*I shot the Albatross*

to Return

*The selfsame moment I could pray;*

*And from my neck so free*

*The Albatross fell off, and sank*

Shows how the initial transgression disrupts this balance. The Killing section, when the Albatross is killed, represents the domination of material action over moral and spiritual reason, causing an imbalance. Curse illustrates the consequence of this rupture:

*Day after day, day after day,*

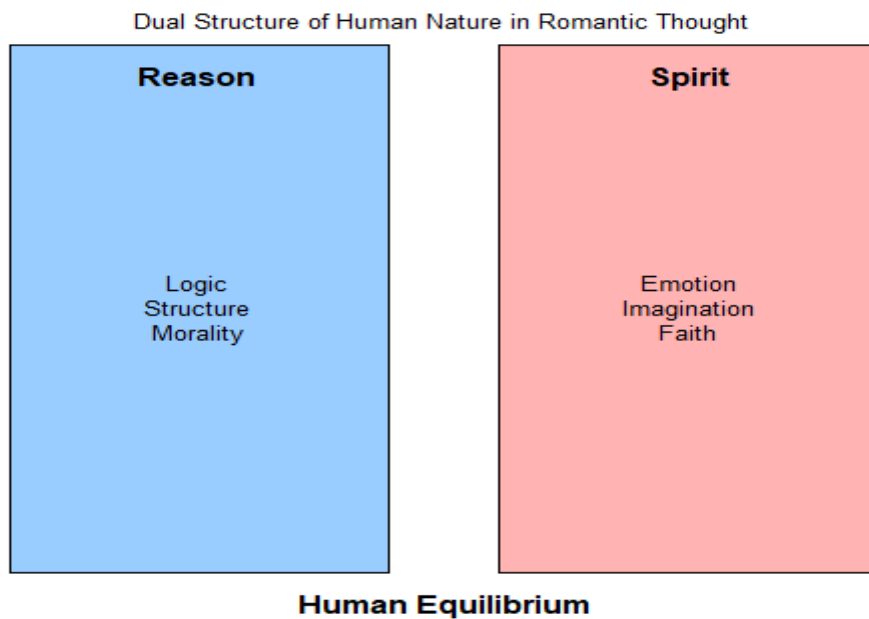
*We stuck, nor breath nor motion;*

*As idle as a painted ship  
Upon a painted ocean.  
And the Albatross begins to be avenged.  
Water, water, everywhere,  
And all the boards did shrink;  
Water, water, everywhere,  
Nor any drop to drink*

The main character is confronted with suffering, guilt, and isolation, which underlines the need for regulation by reason and spiritual awakening. Then, Vision marks a turning point where the spirit begins to perceive nature and its laws, preparing for reconciliation with it

*He prayeth best, who loveth best  
All things both great and small;  
For the dear God who loveth us,  
He made and loveth all*

The final sections, Blessing and Return, symbolize the complete restoration of human balance, where reason, spirit, and ecological awareness harmonize. This figure thus establishes the central conceptual framework: balanced human life requires the coexistence of logic, emotions, and attention to nature.



**Figure 1: Human Equilibrium**

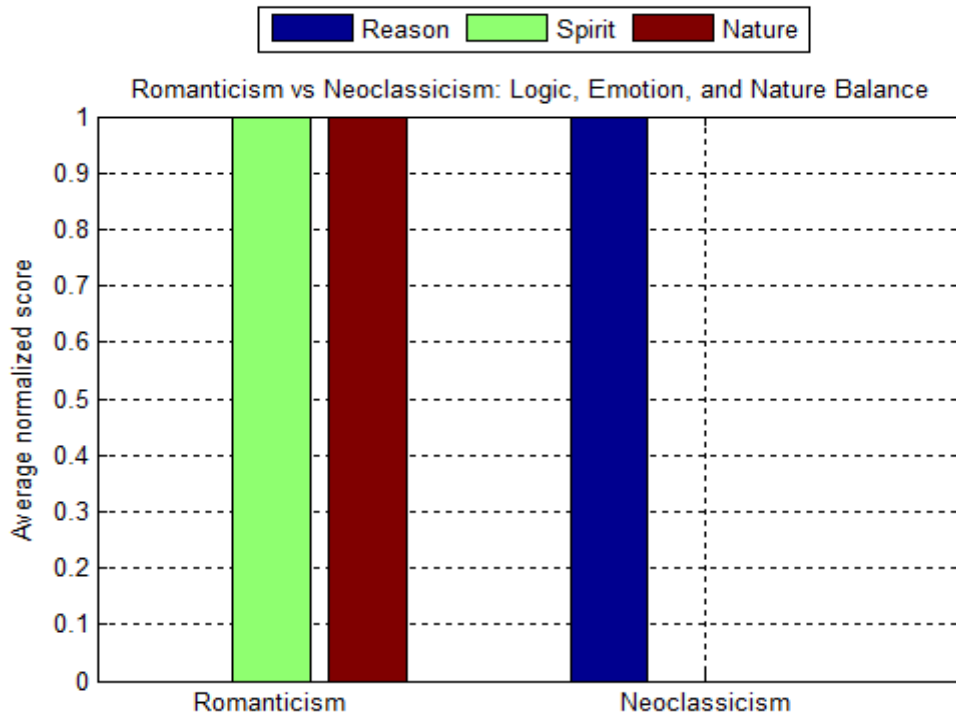
**Figure 2: Romanticism and Neoclassicism: Logic, Emotion, and Nature**

This figure compares the literary movements of Neoclassicism and Romanticism in terms of the dominance of reason, spirit, and nature. Neoclassicism favors logic, discipline, and objectivity, reflecting a vision where reason alone structures human behavior. Romanticism, exemplified by Coleridge's poem, emphasizes imagination, emotion, and the deep connection with nature. Following the progression of the poem, we observe that although reason is essential to regulate human action (Killing and Curse), it is the awakening of the spirit and sensitivity to nature (Vision, Blessing, Return) that allows for deeper understanding and balance. This is evident in

*O happy living things! no tongue*

*Their beauty might declare:  
 A spring of love gush'd from my heart  
 And I bless'd them unaware*

Where the Mariner blessed the water –Snakes and sees for the first time beauty in nature after spiritual desolation. This figure thus shows that Romanticism completes logic with emotion and respect for nature, rather than ignoring it.



**Figure 2:** Romanticism and Neoclassicism: Logic, Emotion, and Nature

**Figure 3: Overbalance of Reason, Spirit, and Nature**

The third figure highlights the relative evolution of reason, spirit, and nature throughout the poem. Each narrative section is associated with varying intensities of these three components. Killing reveals insufficient reason to control material impulses, as revealed in the following lines:

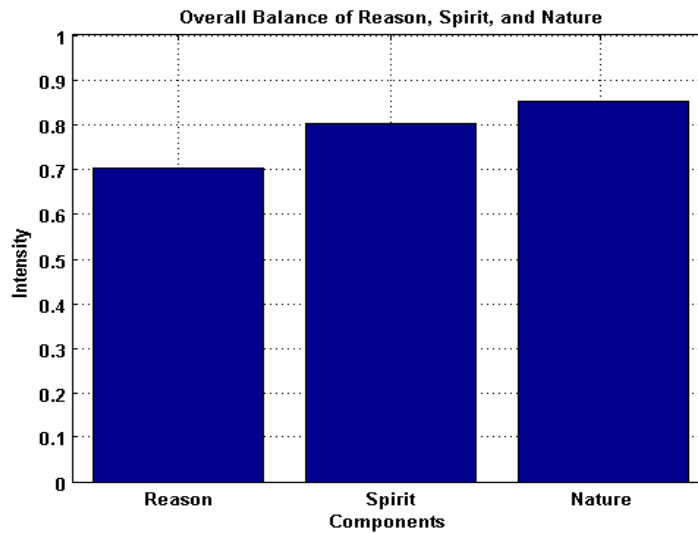
*And I had done an hellish thing,  
 And it would work 'em woe:  
 For all averr'd, I had kill'd the bird*

While Curse sees the mind suffering the consequences of the act, as demonstrated in the following:

*But oh! more horrible than that  
 Is the curse in a dead man's eye!  
 Seven days, seven nights, I saw that curse,  
 And yet I could not die.*

Also when he could not pray in  
*I look'd to heaven, and tried to pray;  
 But or ever a prayer had gusht,  
 A wicked whisper came, and made  
 My heart as dry as dust.*

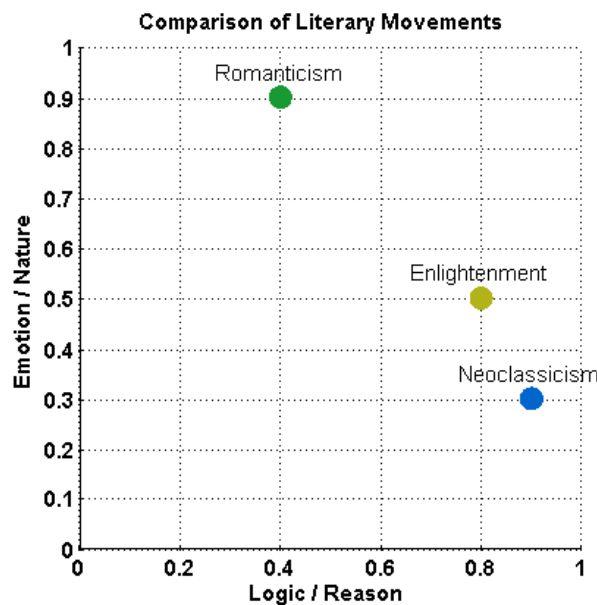
In Vision and Blessing, spirit and nature begin to take over, indicating a process of inner reconciliation and moral regulation. Finally, Return symbolizes the achievement of optimal balance, where reason, spirit, and respect for nature interact harmoniously. This figure clearly illustrates that the survival of a complete and balanced human life requires the combination of these three components.



**Figure 3:** Over balance of reason, spirit, and nature

**Figure 4: Comparison of literary movements**

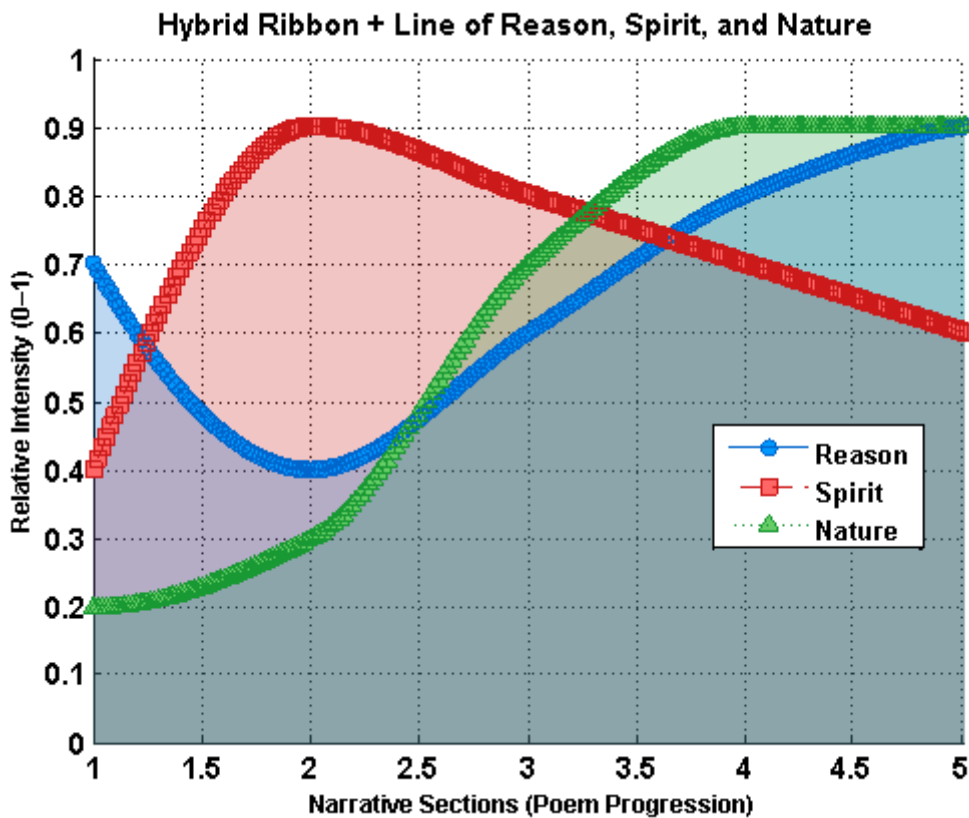
The fourth figure offers a direct comparison of the literary movements Neoclassicism and Romanticism, along with the progression of the poem. It emphasizes that Neoclassicism relies primarily on reason and logic, with a limited role for the spirit and nature. In contrast, Romanticism values imagination and ecological sensitivity while integrating reason to structure human experience. The poem's narrative progression demonstrates how Coleridge synthesizes these elements: it does not reject logic but complements it with emotion and awareness of nature. This figure highlights the originality of the romantic approach, which combines neoclassical objectivity with sensitivity and ecological respect



**Figure 4:** Comparison of literary Movements

**Figure 5: Hybrid Ribbon + Line of Reason, Spirit, and Nature**

The fifth figure uses a hybrid diagram combining lines and ribbons to represent the intensity and evolution of each component. The colored ribbons show the relative magnitude of reason, spirit, and nature at each stage of the narrative progression, while the lines help track the exact development. The Killing section shows a dominance of misapplied reason, Curse illustrates maximum imbalance, and Vision represents the emergence of spirit and nature. Finally, Blessing and Return manifest complete harmony. This figure is particularly useful for simultaneously visualizing the intensity and dynamic progression of all three dimensions of human experience



**Figure 5: Hybrid Ribbon + line of Reason, Spirit, and Nature**

**Figure 6: Poem Progression: Relation between Reason, Spirit, and Nature**

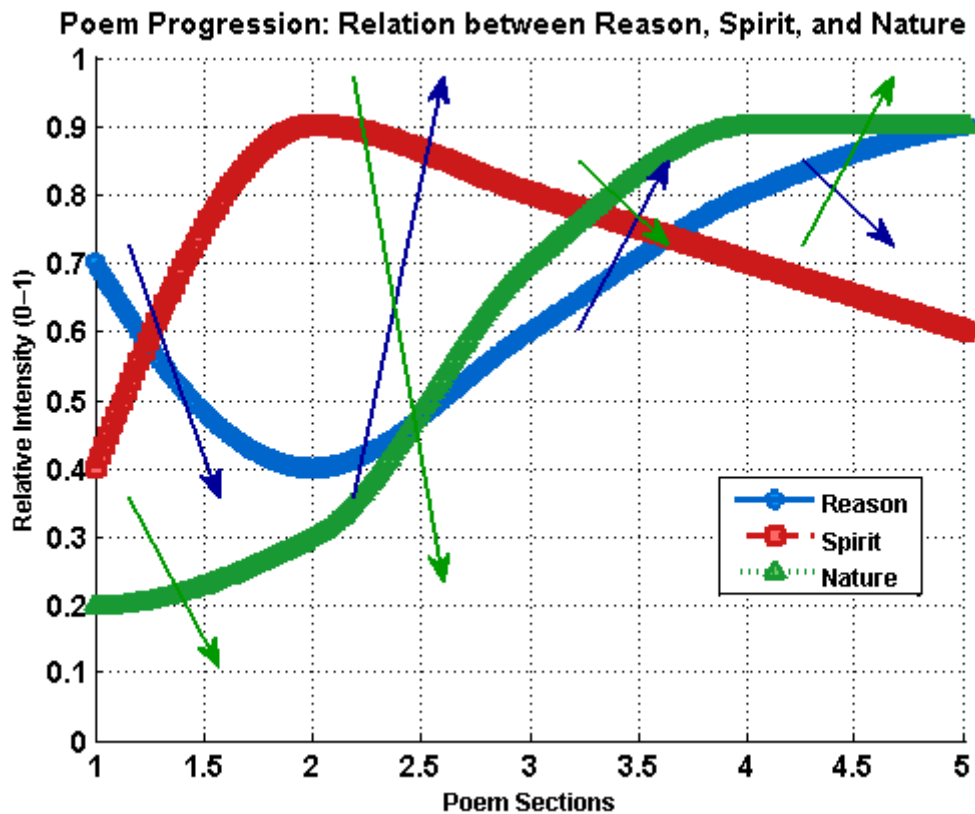
The sixth figure focuses on the interactions between the three components throughout the poem, using arrows to show the direction of the relationships. In Killing, materialistic action dominates and disrupts the spirit and nature. Curse highlights the moral suffering that results from this. In Vision, the mind begins to guide actions in harmony with nature, and Blessing and Return show the complete integration of reason, spirit, and nature. This figure makes explicit the causal and dynamic relationship between these components, illustrating how narrative evolution restores human balance.

All six figures offer a complete visual and conceptual analysis of Coleridge's work:

- They show that the poem's narrative progression follows an arc of imbalance (Killing, Curse) towards harmony (Blessing, Return).
- They highlight the essential interaction between reason, spirit, and nature for a balanced life.

- They also compare Romanticism and Neoclassicism, showing that Romanticism does not abandon logic but enriches it through emotion and ecological sensitivity.

These figures are therefore not only graphic representations, but also tools of literary and philosophical analysis, illustrating the internal logic of human and moral progression in *The Rime of the Ancient Mariner*.



**Figure 6:** Poem progression: relation between Reason, Spirit, and Nature

#### 4.2 Quantitative Analysis of Human Balance in *The Rime of the Ancient Mariner* Using Artificial Intelligence

To better understand the complex dynamics among Reason, Spirit, and Nature in *The Rime of the Ancient Mariner*, we used artificial intelligence techniques, including linear and polynomial regression and neural networks. These tools enable quantifying interactions among abstract literary components, visualizing narrative progression, and objectively validating qualitative observations. Figures 7, 8, and 9, respectively, present the component intensities by section, their contributions to human balance, and the progression of human balance simulated by the machine learning models. This approach highlights AI's ability to enrich literary analysis and to confirm the poem's narrative arcs.

##### **Figure 7: Reason, Spirit, and Nature Intensities per Section**

This figure presents the normalized intensities of the three fundamental components, Reason, Spirit, and Nature, for each section of the poem *The Rime of the Ancient Mariner*: Killing, Curse, Vision, Blessing, and Return. The first sections, Killing and Curse, are dominated by Reason, while Spirit and Nature are very weak. This illustrates the protagonist's initial imbalance, where material action takes precedence over moral and spiritual regulation. In the Vision section, we observe a gradual rise of Spirit and Nature, indicating an awakening of consciousness and ecological awareness. Finally, Blessing and Return show high, balanced

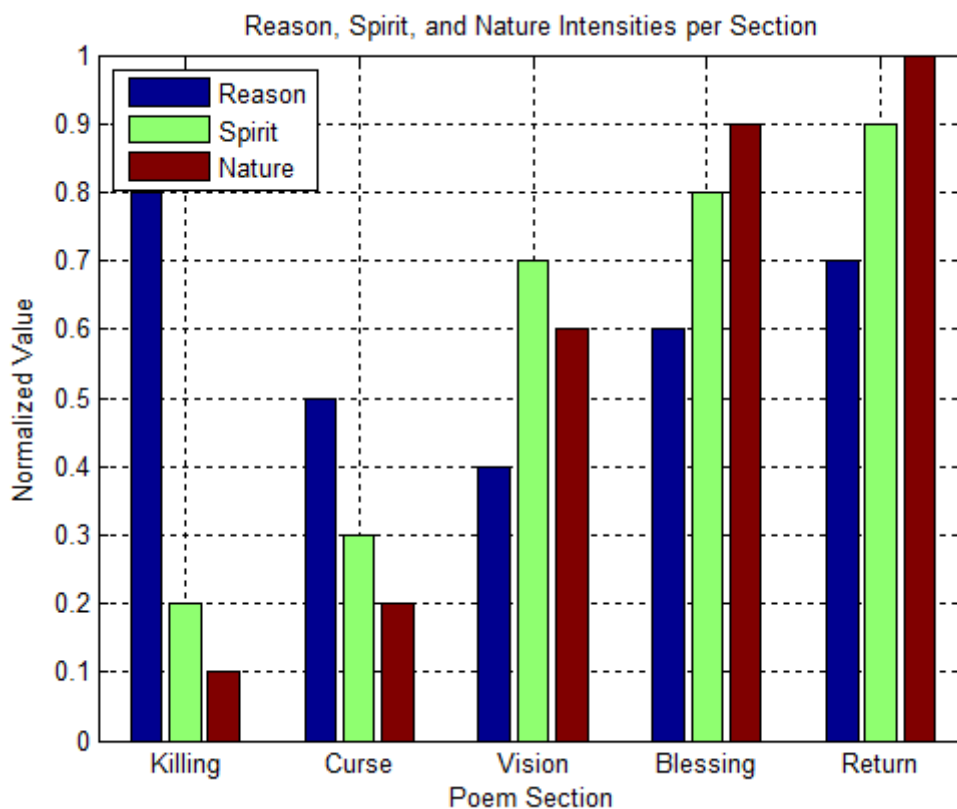
intensities across the three components, reflecting reconciliation and final harmony. This figure demonstrates that AI can quantify abstract literary concepts and visualize their evolution, offering an objective account of the text's moral and spiritual progression.

### Figure 8: Feature Contributions to Human Equilibrium per Section

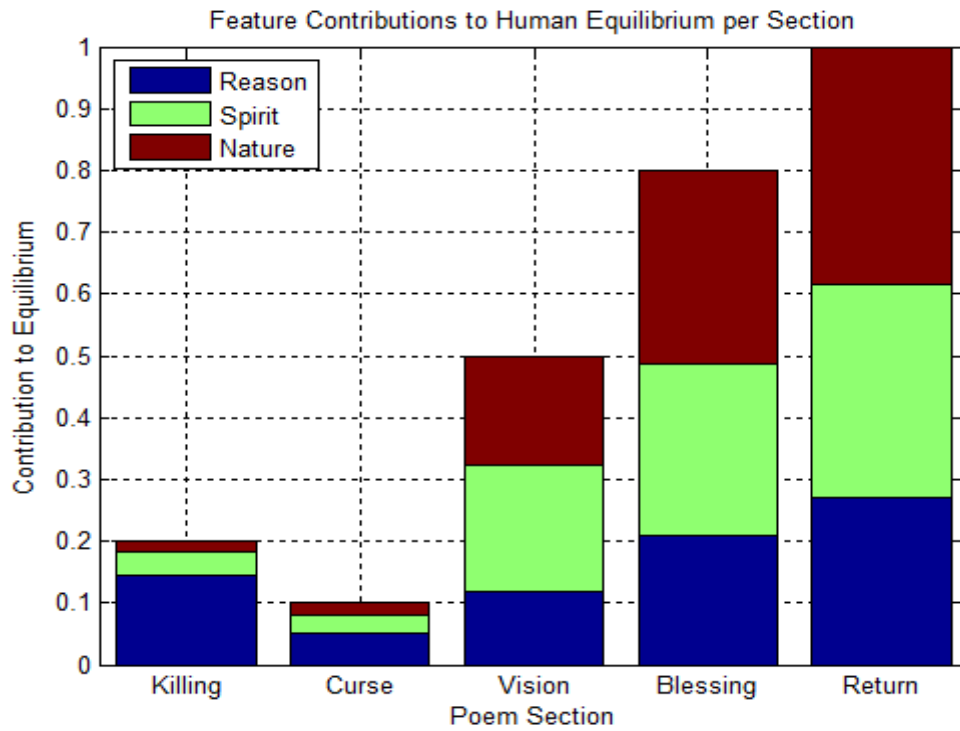
Figure 8 represents the relative contribution of each component (Reason, Spirit, and Nature) to the overall human balance score in each section, as stacked bars. In Killing and Curse, Reason contributes the majority, but the balance remains weak, which reflects a moral and spiritual disorder. Vision marks a turning point where Spirit and Nature take on increasing importance, gradually regulating action and restoring balance. In Blessing and Return, all components contribute almost equally, materializing complete harmony. The use of AI, including regression models and neural networks, enables objective measurement and quantification of these contributions, confirming and clarifying qualitative observations. This approach validates the poem's narrative progression and demonstrates the potential of machine learning techniques for analyzing complex literary texts.

### Figure 9: Progression of Human Equilibrium (Machine Learning Predictions)

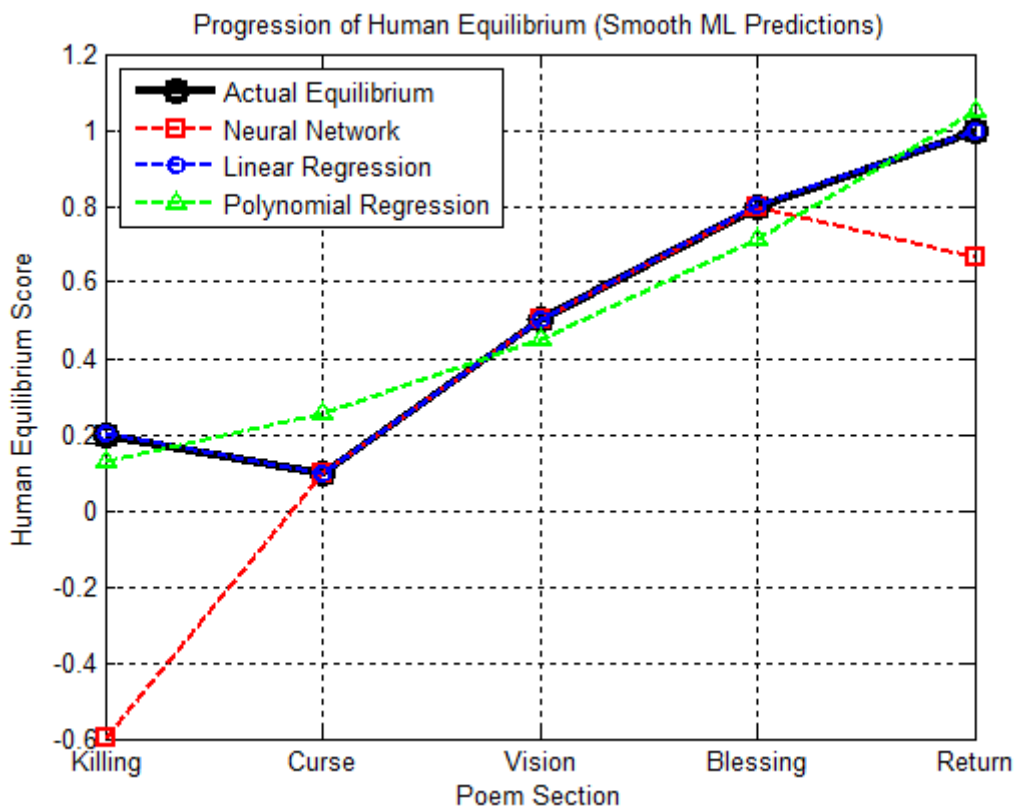
Figure 9 overlays the actual human balance score with the predictions of three machine learning algorithms: Linear Regression, Neural Network, and Polynomial Regression. All curves faithfully reproduce the poem's narrative arc: an initial weak balance in Killing and Curse, a gradual rise in Vision, and a maximum balance in Blessing and Return. Linear regression provides smooth, consistent predictions, while the neural network captures subtle nonlinearities, and polynomial regression provides a continuous curve to visualize the overall evolution. This figure clearly illustrates that AI can quantitatively validate narrative arcs and complex interactions between literary features. It confirms the conclusions of Figures 7 and 8, showing that the progression from imbalance to harmony is both logical and measurable, thus reinforcing the interest of artificial intelligence for literary studies.



**Figure 7: Reason, Spirit, and Nature Intensities per Section**



**Figure 8: Feature Contributions to Human Equilibrium per Section**



**Figure 9: Progression of Human Equilibrium (Machine Learning Predictions)**

Figure 10 presents the performance of three regression models: Linear Regression, Neural Network, and Polynomial Regression evaluated through three metrics: the coefficient of determination  $R^2$ , the root mean square error RMSE, and the mean absolute error MAE. These metrics allow us to assess each model's ability to predict the values of human balance (reason, spirit, and nature) across the different sections of the poem *The Rime of the Ancient Mariner*. The coefficient of determination  $R^2$  indicates the proportion of the variance of the actual values explained by the model. A high  $R^2$  indicates the model's ability to capture the data's trend. In the figure, the Polynomial Regression and Linear Regression models show the highest values, suggesting that they better align with the progression of human balance in the poem, while the Neural Network shows a slightly lower value.

Root Mean Square Error (RMSE) measures the average deviation between predictions and actual values, giving greater weight to large differences. Lower RMSE values correspond to more accurate predictions. The figure shows that Polynomial Regression has the lowest RMSE, followed by Linear Regression, while Neural Network has larger deviations. This indicates that, for this small dataset, linear and polynomial models are more reliable in modeling the evolution of human balance.

The mean absolute error (MAE) measures the average absolute difference between predicted and actual values. The trend observed for the MAE is similar to that of the RMSE: Polynomial Regression and Linear Regression present lower values, confirming a consistent and stable predictive performance across all sections of the poem.

This figure demonstrates that Polynomial Regression is slightly superior to Linear Regression in predicting human balance, capturing small nonlinear variations in the poem. Linear Regression still performs well, showing that the balance progression mainly follows a linear trend. The Neural Network, on the other hand, is less accurate, likely due to its small dataset and complexity.

This analysis highlights the usefulness of artificial intelligence in literary study by enabling the quantification and validation of the evolution of human balance in *The Rime of the Ancient Mariner*. The results corroborate previous qualitative observations: the balance is disturbed in the “Killing” and “Curse” sections, then gradually restored until “Return”.

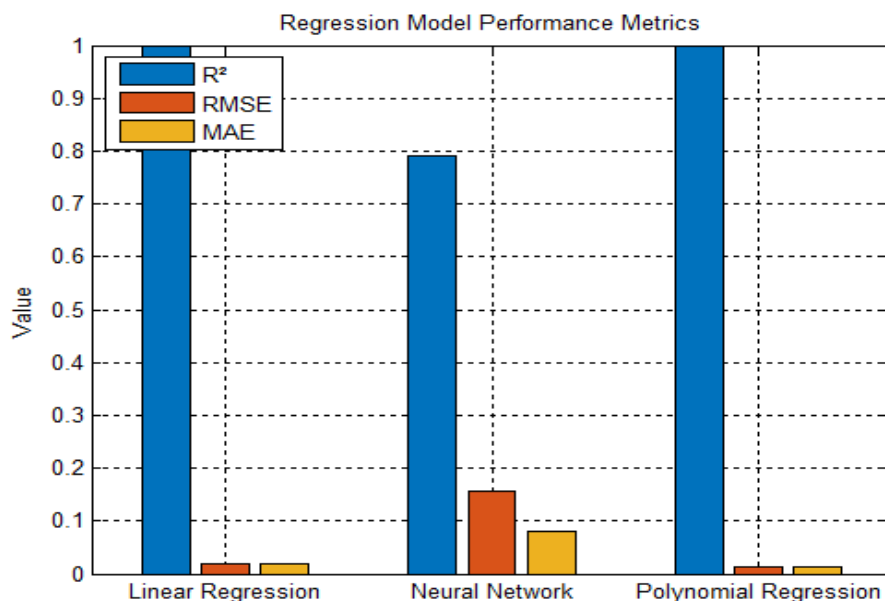


Figure 10: Regression model performance metric

## 5. Conclusions and perspectives

In this research, the poem of *The Rime of the Ancient Mariner* is presented as the story of a man who disrupts the balance between himself, nature and the spiritual by killing the Albatross, an act that triggers a series of significant ordeals. This difficult journey ends up leading him to a new understanding of life and his own place in the world. The text also places the poem in the debate between the rational thought of the Enlightenment and the romantic impulse, which restores value to imagination, emotions and the intimate link with nature. After a review of the interpretations already proposed by critics, it is noted that the relationship between Reason, Spirit and Nature had not yet been considered as a linked whole. By combining a careful reading of the poem with analysis tools inspired by contemporary artificial intelligence (AI) methods, the evolution of these three elements is followed throughout the story, making it possible to visualize and quantify complex relationships that would remain invisible through a purely traditional reading. The analysis showed that Reason dominated in the first sections (Killing and Curse), reflecting a moral and spiritual imbalance, while Spirit and Nature were very weak. As the story progresses, Spirit and Nature gradually increase in Vision and reach complete balance in Blessing and Return, illustrating the final reconciliation. Artificial intelligence models confirmed these observations: linear and polynomial regression faithfully tracked the evolution of human balance with high precision, while neural networks captured small non-linear variations.

The  $R^2$ , RMSE and MAE metrics showed that linear and polynomial models were particularly reliable in predicting the evolution of the balance, highlighting that the progression generally follows a linear trend with some fine variations. These results confirm that human harmony, in Coleridge's poem, is reconstructed only when Reason, Spirit and Nature progress together. They also illustrate the interest of artificial intelligence as a complementary tool to enrich literary analysis, by quantifying and validating complex dynamics, which would be difficult to perceive through traditional reading.

## References

- Abrams, M. H. (1984). *Structure and Style in the Greater Romantic Lyric*. The Correspondent Breeze: Essays on English Romanticism. Norton
- Crawford, A. W. (1919). On Coleridge's Ancient Mariner. *Modern Language Notes*, 34(5), 311-313. <https://doi.org/10.2307/2915385>
- Das, A. (2022). Rereading of Samuel Taylor Coleridge's Rime of the Ancient Mariner as an allegorical poem, a ballad with Ecocritical touch. *International Journal of English Literature and Social Sciences*, 7(5), 65-69.
- Ezzeldin, H. H. (2022). Narrating the wound: Trauma and memory in Coleridge's The Rime of the Ancient Mariner and Poe's "The Raven". *International Journal of Linguistics, Literature and Translation*, 5(1), 24.
- Gose, E. B., Jr. (1972). *Imagination indulged: The irrational in the nineteenth-century novel*. Montreal, Canada: McGill-Queen's University Press.
- Guthrie, W. N. (1898). The "Rime of the Ancient Mariner" as prophecy. *The Sewanee Review*, 6(2), 200-213.
- Hume, D. (2001). Of the standard of taste. In V. B. Leitch (Ed.), *The Norton anthology of theory and criticism* (pp. 486-499). W. W. Norton & Company.
- Kant, I. (1881). *Critique of pure reason* (F. M. Müller, Trans.). Macmillan and Co.
- Khetarpal, A., & Singh, S. (2012). Phobias in poetry: Coleridge's Ancient Mariner. *Indian Journal of Psychological Medicine*, 34(2), 193-196.

Kitson, P. J. (1989). Coleridge, the French Revolution, and The Ancient Mariner: Collective Guilt and Individual Salvation. *The Yearbook of English Studies*, 19, 197-207.

Locke, J. (1999). *An essay concerning human understanding*. The Pennsylvania State University Press.

McQueen, J. (2014). Old faith is often modern heresy: Re-enchanted orthodoxy in Coleridge's "The Eolian Harp" and "The Rime of the Ancient Mariner. *Christianity & Literature*, 64(1), 21-42.

Miall, D. S. (1984). Guilt and Death: The Predicament of The Ancient Mariner. *Studies in English Literature, 1500-1900*, 24(4), 633-653

Muskan, F., & Hassin, R. (2024). Explanation of Guilt, Morality, and Death in The Rime of the Ancient Mariner from the Perspective of Psychoanalysis. *Migration Letters*, 21(S9), 19-26

Penn Warren, R. (1969). A Poem of Pure Imagination: An Experiment in Reading. *Twentieth Century Interpretations of The Rime of the Ancient Mariner. Englewood Cliffs (NJ): Prentice-Hall*.

Perry, S. (2025). Explaining explanation in S. T. Coleridge's rime of the ancient Mariner, *The Explicator*, 84 (1), 106-112; Routledge, Taylor and Francis. DOI: 10.1080/00144940.2025.2539263.

Singh, N. (2022). An Ecocritical study of S. T. Coleridge's "The Rime of the Ancient Mariner." *African Journal of Humanities and Social Sciences*, 2(1) 11-17

Wu, D. (1999). *A companion to Romanticism*. Blackwell Publishers.