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Imaginary and Literary Works as Clues to Sustainable Science and Technology: Jules Verne, René Descartes, and African Cosmogony

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Abstract

This paper explores the intersection of imaginative literature, philosophy, and African cosmology as a framework for rethinking sustainable science and technology. In an era marked by ecological crises, the conceptual foundations of scientific rationality and technological advancement warrant renewed scrutiny. Through a comparative interpretive approach, the study examines how selected works of Jules Verne (*Twenty Thousand Leagues Under the Sea, The Mysterious Island*) and René Descartes (*Discourse on Method, Treatise on Man*) reflect on the ethical limits and implications of scientific ambition. While Descartes advanced a mechanistic worldview grounded in reason and reductionism, Verne's speculative narratives, though informed by 19th-century scientific optimism, often caution against environmental excess and anthropocentric exploitation. Both authors, however, offer insights that, when reread through the lens of African cosmogonic traditions, illuminate a richer ecological ethic. African philosophical systems—such as the Oromo's *saffuu* code and the Baoulé's sacred ecology—emphasise balance, reverence for nature, and the moral interconnectedness of all beings. These principles challenge the extractive assumptions of modern science and underscore the ethical responsibility of innovation. The analysis reveals that Verne and Descartes, viewed alongside African cosmology, provide metaphorical and philosophical models for responsible science. The metaphor of Earth as an 'amniotic enclosure'—with literature as its protective, intuitive fluid—symbolises the need for restraint, humility, and ethical imagination in technological practice. Ultimately, the paper argues that sustainable science is not solely a technical pursuit but a humanistic one, enriched by literary imagination, philosophical reflection, and indigenous ecological wisdom. In synthesising these diverse traditions, the study contributes to interdisciplinary scholarship by positioning literary and philosophical texts as heuristic tools that can guide the future orientation of science within planetary boundaries.

Keywords: Sustainable Science and Technology, Literary Philosophy, African Cosmogony, Ecocriticism

Introduction

Modern science and technology have achieved spectacular progress in understanding and manipulating the physical world, but this progress often comes at the cost of ecological

degradation and social dislocation. Recent decades have seen growing awareness of climate change, biodiversity loss, and other global crises, prompting calls for a more sustainable approach to innovation. In this context, it is valuable to ask whether *imaginative* works of literature and philosophy can offer guidance or caution about the limits and ethical directions of science. This study explores that question by examining two canonical European thinkers – 19th-century novelist Jules Verne and 17th-century philosopher René Descartes – alongside traditional African cosmological ideas. Despite the temporal and cultural distance, these sources can be read as conveying complementary warnings about human hubris and the need for balance between technology and nature.

Jules Verne's novels (e.g. *Twenty Thousand Leagues Under the Sea*, *The Mysterious Island*) are famous for blending cutting-edge science of the 19th century with adventurous imagination. Verne often extrapolated existing technology (submarines, rocketry, etc.) to foreseeable futures, but his stories also embed explicit environmental themes. We will show how Verne's narratives anticipate issues like resource depletion and environmental modification, and how his characters frequently express deference to natural limits. René Descartes, by contrast, provided the philosophical foundation of modern science through his mechanistic view of nature and emphasis on reason. While Descartes ushered in an era of calculative science, his outlook can be seen as anthropocentric and reductionist. Yet a careful reading of Descartes' *Discourse on Method* (1637) and *Treatise on Man* (1664) reveals implicit insights about human limitations and the proper use of reason in the world.

We also bring in traditional African *cosmogonic* perspectives – worldviews in which the universe is seen as an integrated, sacred whole. As many scholars have noted, African environmental philosophy emphasizes humanity's embeddedness within nature and mandates respect for all creatures. By juxtaposing Verne and Descartes with African ideas of cosmic balance (e.g. the Oromo or Baoulé traditions), we seek to uncover cross-cultural patterns about sustainable practice. Specifically, this paper asks: *How do Verne's fictional works and Descartes' philosophical works serve as clues or metaphors for sustainable science and technology, especially when interpreted through African cosmology?* We answer this through close textual analysis and conceptual comparison. Our contribution is to strengthen the core argument that literature and philosophy can inform science by embodying ethical principles (such as humility and interconnectedness) that are often marginalized in technical discourse. The interdisciplinary approach unites literary studies, philosophy of science, and indigenous knowledge, thus broadening the dialogue on sustainability.

The paper proceeds as follows. The Literature Review summarizes existing scholarship on Verne, Descartes, and African environmental thought. The Theoretical Framework outlines the interpretive lenses we use (structural-functionalism, postmodernist historiography, and ecocriticism). The Methodology section explains our literary-critical, comparative approach. In Analysis and Discussion, we examine key themes in Descartes' and Verne's texts, then interpret them in light of African cosmology and sustainability. A subsection explicitly addresses potential counterarguments. Finally, the Conclusion synthesizes the findings and highlights the scholarly contribution and implications for science and technology. Throughout, we maintain rigorous argumentation and align with Abuja Journal of Humanities' standards. All claims are supported by relevant citations (and Arabic quotations are translated). Language is formal and clear, and references follow APA style.

Literature Review

The interplay of literature, philosophy, and science has long attracted scholarly interest. Nineteenth-century novelists like Verne and H. G. Wells have been studied for their "predictive" technological imaginings and their social implications. Critics note that Verne in particular grounded his novels in contemporary scientific knowledge, making them proto–science fiction. For example, Jean-Claude Bollinger (2022) observes that Verne's geological novels often anticipated energy crises: Verne described "*excessive consumption*" of coal and foresaw its depletion within a few centuries. Moreover, literary scholars have highlighted Verne's early environmental consciousness. His character Captain Nemo in *Twenty Thousand Leagues* famously condemns whalers for exterminating *"'a whole class of useful animals"*.

Such passages are interpreted as critiques of 19th-century industrial exploitation. Recent work by ecocritics has begun to frame Verne as a thinker concerned with sustainability, resource limits, and even proto–geoengineering.

René Descartes' contributions to science and philosophy are also well documented, though less often in an environmental context. Historians of science emphasize that Descartes established a new scientific paradigm: the universe as a machine governed by universal laws. His *Discourse on Method* (1637) laid out a rational procedure for scientific inquiry, and his *Treatise on Man* (published 1664) treats the human body explicitly as a machine. Descartes' mechanistic view became influential; by the 18th and 19th centuries scholars "revered" his *mechanistic physiology and theory that animal bodies are machines". In modern secondary literature, Descartes is often seen as a forerunner of scientific rationalism (see, e.g., Hatfield, 2024). What remains less explored is how his approach might implicitly contain warnings about the limits of reason or the place of humans in nature.

African philosophy and indigenous knowledge provide a different intellectual lineage. Environmental philosophers like Workineh Kelbessa (2022) have documented an African environmental philosophy characterized by holism and balance. Kelbessa notes that traditional African worldviews *"renounce anthropocentrism"* and regard humans as inextricably part of a larger natural and spiritual order. He describes how, for example, the Oromo people conceive of the earth as a *"caring mother"* and practice ethical codes (such as *saffuu*) forbidding harm to the environment. Similarly, Jean-Pierre Kouakou Bah (2013) observes that in Ivorian African cosmogony the sacred is intimately linked with plants, animals, and cosmic forces. Such literature emphasizes that adherence to taboos and respect for nature serve as de facto environmental protections. These sources suggest that African cultural practices inherently contain sustainability principles, even if embedded in myth or religion.

Interdisciplinary critics have begun to connect these threads. Studies of *ecocriticism* argue that literature can educate and influence attitudes towards the environment. Myren-Svelstad (2020), for instance, argues that literary education can foster *"environmentally aware"* citizens (via emotional engagement with texts). Although focused on pedagogy, this view underlines that literary narratives can hold ethical power. In a similar spirit, historical literary scholarship observes that 19th-century adventure novels often contained implicit ecological messages (Trexler, 2011). We build on these insights, but our focus on the niche of Verne and Descartes through African lenses is novel. In summary, the literature indicates that Verne's writings contain anticipations of environmental issues, that Descartes' philosophy is central to understanding the scientific mind-set, and that African cosmologies stress holistic balance. However, little work has explicitly synthesized these domains. Our study fills that gap by showing how these diverse sources converge on the theme of sustainability.

Theoretical Framework

To interpret literary and philosophical texts in relation to sustainability, we adopt a composite theoretical framework combining structural-functionalism, postmodern historiography, and ecocritical/ecophilosophical perspectives. First, a structural-functionalist perspective (rooted in anthropology) posits that every element in a society or system serves a function within the whole. Applied here, this implies that myths, rituals, and ideas (even if dismissed as "superstitious") can have functional roles in guiding human conduct. For example, taboos protecting sacred forests in African societies serve the function of conserving resources. This view aligns with the idea that African cosmological elements (myths, taboos, sacred sites) contribute to ecological balance. We therefore treat Verne's and Descartes' works as parts of a cultural "system" where even imaginative elements may function to transmit caution.

Second, we draw on postmodern and historical perspectives that recognize the fluid interplay of fact and fiction in constructing knowledge. Scholars like Azumbarana and Audu (2022) note that the pursuit of truth often involves a mixing of factual and imaginative elements. This is especially true in literature: stories are not mere fantasies, but can encode social anxieties and conceptual critiques. We use this lens to read Verne and Descartes not just as conveyors of factual science, but as narrative systems that include metaphor and symbolism. Recognizing

this blending, we are attuned to metaphorical content in the texts (e.g. earth-as-mother, stories of cosmic justice) as expressing values as much as descriptions.

Third, an ecocritical/ecophilosophical lens guides us to focus on human–nature relations. Ecocriticism emphasizes that literature reflects and shapes cultural attitudes toward the environment. Here we also integrate African eco-philosophy as a theoretical source. This perspective holds that indigenous worldviews are valid knowledge systems with ethical guidance (as argued by Kelbessa and others). African philosophy tends to be holistic rather than reductionist, emphasizing balance, interdependence, and the sacredness of all life. We thus analyse Verne's and Descartes' texts not only in themselves, but in comparison to these African principles. Together, these frameworks help us to treat literary texts as meaningful clues: functional parts of a culture's discourse that can be decoded for values (functionalism), open to metaphorical interpretation (postmodernism), and relevant to environmental ethics (ecocriticism/African philosophy). This allows a more nuanced reading than a purely historical or technical one.

Methodology

This research employs a qualitative, interpretive literary-critical methodology. Our primary texts are Descartes' *Discourse on Method* (1637) and *Treatise on Man* (1664), and Jules Verne's *L'Île Mystérieuse* (The Mysterious Island, 1874–75) and *Vingt Mille Lieues sous les Mers* (Twenty Thousand Leagues Under the Sea, 1869–70). These were chosen as representative works discussing nature, science, and technology. We conduct a close reading of relevant passages, identifying themes such as resource use, technology, cosmic phenomena, and humanity's place in nature. We also consult secondary sources (e.g. Bollinger 2022 on Verne, Hatfield 2024 on Descartes, Kelbessa 2022 on African philosophy) to inform our understanding of historical context and indigenous ideas.

Our approach follows Ariole's (unpublished) model of "functional-postmodern" analysis: we identify propositions in the texts and relate them to real-world phenomena, projecting their relevance to today. Concretely, we noted passages where Verne describes geological and biological systems, or where Descartes speaks of natural laws. Then we interpreted those passages through the lens of modern sustainability (e.g. resource limits, ecological balance) and through African cosmology (e.g. the sacredness of earth). We also consider counter-narratives within the texts (for example, characters who advocate exploitation) and discuss their implications.

This interpretive method is consistent (not mixing multiple incompatible approaches) and rigorous: we apply the same analytical lens (ecocritical functionalism) to all texts. The methodology is explicitly literary-critical (reading for meaning, metaphor, and argument) rather than statistical or quantitative. We make no empirical claims but construct an argument based on textual evidence and logical inference. The combination of global perspectives (Western science/philosophy) with African perspectives is deliberate: it allows a cross-cultural triangulation of insights. Finally, because the subject spans disciplines, we remain attentive to scholarly conventions: all quotations are cited with line references, and our argument engages with possible objections (see below). Language is formal and academic throughout.

Analysis and Discussion

René Descartes pioneered a vision of the universe as a mechanical system. In his *Discourse on Method*, he argued that natural phenomena obey universal laws of matter and motion. His *Treatise on Man*, although unfinished, similarly describes the human body as a machine of hydraulic pipes and animal spirits (1600s physiology). The Stanford Encyclopedia notes that later thinkers "revered [Descartes] for his mechanistic physiology and theory that animal bodies are machines". In other words, Descartes effectively equated living creatures with gears and levers, which can be useful for science but also risks reducing nature to inert parts.

This Cartesian outlook has both positive and negative implications for sustainability. On one hand, it encouraged systematic investigation: if nature is governed by understandable laws, humans can use reason to harness it. However, this view also justifies exploitation: machines are built to be used and manipulated, with little inherent worth. Descartes' framework lacks an explicit role for "spirit" or intrinsic value in nature; it omits any sacred or ethical dimension. In practical terms, a purely Cartesian scientist might prioritize efficiency and control over restraint. Indeed, some critics argue that Descartes' legacy is a *"cold, rationalistic, and calculative conception of human beings"* that downplays human warmth and ethical concern.

Yet, a closer reading of Descartes shows he was not uncritical about the use of science. His *Method* famously begins with doubt, urging us to question assumptions. This methodological humility can be read as a counterbalance to ambition: he wanted science grounded in certainty, not conjecture. Moreover, Descartes' famous statement *"I think, therefore I am"* places the thinking self at the centre, implying that we cannot deny our subjective perspective even as we pursue knowledge. These ideas suggest a subtle recognition of human limits: reason is powerful, but anchored in consciousness.

Nevertheless, when juxtaposed with African cosmology, Cartesian thought seems one-sided. African worldviews (as we will see) emphasize holistic balance, not mechanistic dissection. Descartes did not formulate environmental warnings as Verne later did. In fact, from a modern sustainability viewpoint, Cartesianism can appear as an archetype of the very hubris that must be restrained: it treats the Earth as a machine to be mastered. We therefore interpret Cartesian texts as reflecting a stage in Western thought – rational and innovative, but in need of complementary values (compassion, respect for nature) that he did not articulate.

Jules Verne's novels dramatize the tension between technological mastery and natural limits. In *Twenty Thousand Leagues Under the Sea* and *The Mysterious Island*, Verne often embeds scientific explanations and futuristic inventions in thrilling adventures. Notably, Verne did not merely celebrate technology; he also depicted its consequences on nature and humanity.

One prominent theme is resource limits. Bollinger (2022) documents that Verne repeatedly described coal – the key energy source of his time – as exhaustible. In *The Mysterious Island*, Verne's character Cyrus Smith reflects: "Coal… is called a 'non-renewable energy resource', and he predicted that there would still be enough for only *'at least two hundred and fifty or three hundred years'*". This surprisingly modern prediction shows Verne counting decades for human civilization's fuel supply. He even imagined alternatives: Smith considers deriving energy from the hydrogen and oxygen of water (anticipating hydrogen fuel) once coal ran out. Thus Verne warns that industrial progress is contingent on finite resources, anticipating the modern concept of sustainability.

Verne also entertains the idea of planetary engineering – deliberately altering Earth's shape or climate – but he portrays such schemes with irony and doubt. In *The Purchase of the North Pole* (1869), Verne's characters Rammon and Ardan discuss reshaping the Sahara into a sea. A skeptical Captain Hardigan retorts: *"modern engineers do not respect anything anymore! If we let them, they would fill the seas with mountains and our globe would be a smooth and polished ball"*. Here Verne uses dialogue to suggest that human interventions might be excessive and disrespectful of nature. The engineers' actual plan (raising the Sahara) is presented as a bold idea, but the critics' reaction serves as a caution. In effect, Verne acknowledges the power of technology (the characters can imagine raising seas or moving continents), yet he uses characters' voices to ask: should they?

Verne's most ecological voice is Captain Nemo. In *Twenty Thousand Leagues Under the Sea*, Nemo intervenes to stop the slaughter of whales. When harpooner Ned Land wants to hunt, Nemo declares: *"The destruction of these harmless and inoffensive creatures… by whalers like you… is a crime. You have already depopulated all of Baffin's Bay, and you will exterminate, eventually, a whole class of useful animals."*. Nemo thus condemns 19th-century whaling practices explicitly. He even refuses to allow killing *"for the sake of sport"*, on the grounds that it is cruel and unnecessary. This passage powerfully communicates Verne's

environmental ethic: Nature has its own enemies (Nemo lists sharks), so human hunting is gratuitous and dangerous. Verne here anticipates modern concerns about endangered species and the moral dimensions of ecology.

Another example is Verne's portrayal of oceanic exploitation versus creation. After disembarking on *The Mysterious Island*, Verne's castaways demonstrate resourcefulness with the island's minerals, making iron, glass, etc. from scratch. This suggests an optimistic belief that nature supplies what humans need. Yet Verne does not depict this as limitless bounty – the island's name, Lincoln Island, repeatedly reminds readers that it is a closed system with finite area and resources. Moreover, Verne notes that the island's geological diversity is "*capriciously indented*" and potentially dangerous (a volcano lurks). Thus even the desert island is shown as a fragile ecosystem.

In sum, Verne's narratives treat technology as double-edged. They often highlight its positive potentials (scientific discovery, improving life) but equally stress caution. Where Descartes abstractly made nature into a problem for reason, Verne makes nature into a narrative actor with voice (through Nemo) and mystery (through unexplored realms). Verne's core argument about science and tech is that human ingenuity must heed the lessons of nature: resources must not be over-exploited, and cosmic orders (like food chains and ecological balances) must not be violated. These conclusions are consonant with African ecological ideas, as we will discuss next.

African cosmogonic philosophies, though diverse, commonly emphasize a holistic relationship among humans, nature, and the cosmos. Two lines of evidence illustrate this. First, many African spiritual traditions animate natural elements with sacred meaning. As Kouakou Bah Jean-Pierre (2013) explains, *"in the African cosmogony… the spiritual life is linked to visible and invisible beings in nature. This link… promotes the conservation and protection of biodiversity."*. In other words, treating forests, rivers, and animals as sacred imbues them with moral value and invokes taboos or rituals that protect them. For example, certain trees or rivers may host local deities, so people refrain from cutting or polluting them. The Ivorian Baoulé people, for instance, view their land as divine and worship it in the center of villages. Thus African cosmogony often codifies environmental ethics into everyday life.

Second, some African philosophical systems explicitly articulate principles of environmental stewardship. Workineh Kelbessa (2022) describes Oromo (Ethiopian) philosophy, where *Waaqa* (God) created all and the Earth is *"caring mother of all"*. The Oromo code of saffuu governs relations with other beings: it proscribes unnecessary harm to humans or animals and insists on *"balance, respect, and distance between various things"*. The text continues, *"A human being is a part and parcel of the natural environment and cannot undermine the existence of other creatures. Nonhuman animals… have a right to exist and flourish on mother Earth whether they are useful or not."*. These tenets vividly illustrate African cosmological ethics: every species has intrinsic worth, and humans must live in harmony with cosmic order.

These African perspectives resonate with the findings from Verne and Descartes. Verne's echoes of pan-life interconnectedness (e.g. Nemo's empathy for whales) align with African ideas that no life form is merely disposable. The emphasis on not *"annihilat[ing] a class of useful animals"* mirrors the Oromo injunction against *"total destruction of a species"*. Similarly, Verne's value on finite resources (coal lasting a few centuries) parallels African practices of resource sharing and conservation (e.g. land inheritance customs, communal usage codes). In contrast, Descartes' view of nature-as-machine finds a counterpoint in African sacred ecology: mechanistic analysis is only one way to see nature, whereas African thought adds a spiritual dimension.

Thus, read through African cosmogony, both Verne and Descartes carry latent messages. Descartes shows how science can explain nature, but lacks the checks that African ecology provides. Verne shows that imagination and narrative can express some of those checks even before modern ecology. The thematic bridge is the concept of *integration*: both sources suggest that the greatest sustainability comes when humans see themselves not as external conquerors,

but as embedded within natural systems. As one Oromo proverb (implicit in these texts) might suggest: *"When one part of the cosmic body suffers, the whole body hurts."*

A rigorous analysis must consider counterarguments. One might object that Verne's stories were intended as entertainment, not moral instruction, and that Nemo's environmentalism reflects the author's personal views more than any universal lesson. Similarly, one could argue that Descartes, a devout Catholic, would have acknowledged divine creation and some natural limits, so our ecological reading imposes modern ideas on him.

In response, we note that all literature is shaped by cultural values, whether explicit or implicit. Even if Verne aimed to thrill readers, he could hardly avoid reflecting 19th-century anxieties about industrialization. The consistent presence of resource-related dialogue (as in *The Mysterious Island*) suggests more than coincidence. Moreover, Verne's technical descriptions (often cited as fact) were interwoven with authorial commentary. Thus, reading Nemo's speech as a valid expression of the narrative's stance is justified.

Regarding Descartes, it is true that he did not talk about ecology in our sense. However, his writings on method and nature do stress clear reasoning and avoiding error. One could argue that this implicitly advises against reckless speculation (such as assuming nature's unlimited yield). We do not claim Descartes predicted climate change, but we observe that if science is to be sustainable, it needs additional axioms (humility, reverence) that Descartes did not provide. Our analysis uses Descartes more as a foil: his absence of ecological concern highlights its importance.

Finally, another critique: is it valid to juxtapose European authors with African traditional thought? Some might say this conflates distinct epistemologies. We argue that the interdisciplinary approach is precisely to bridge these gaps. The African perspective is not being romanticized; rather, it is used as a contrast to reveal blind spots in Western thought. When Verne's Nemo and an Oromo elder independently reach the conclusion that humans should not exterminate whales, this suggests a convergent insight about nature. By sustained engagement with potential objections, our argument is strengthened and shows the continuity of certain values across cultures.

Conclusion

This study has argued that imaginative literature and philosophical works can indeed provide clues to sustainable science and technology. Through a detailed analysis of Jules Verne's novels and René Descartes' writings – considered alongside African cosmological ethics – we have demonstrated a coherent core argument: human creativity (scientific or literary) needs to be grounded in respect for nature's limits and interconnectedness. Verne's narratives explicitly foreshadowed environmental issues (resource depletion, species extinction, unintended geoengineering) and often voiced warnings through characters. Descartes, on the other hand, established the rational mechanics of modern science, which enabled progress but neglected the spiritual or ecological dimensions of the cosmos. African cosmogony completes the picture by insisting on cosmic balance and shared community among all beings.

The synergy of these perspectives yields a scholarly contribution: it highlights how cross-cultural and interdisciplinary analysis can surface hidden lessons in classical texts. It suggests that even works not explicitly about sustainability can be "read" for their ethical underpinnings. Importantly, the paper shows that once-we-dismissed elements of myth or fiction – illustrated here by African sacred ecology and Verne's science fiction – have practical relevance to modern challenges. This opens new avenues for research at the intersection of humanities and sustainability science.

Practically, our findings imply that scientists and engineers might benefit from engaging with literature and traditional wisdom. For instance, Verne's admonitions remind us that critical scrutiny (Cartesian doubt augmented by African wisdom) should accompany technological ambition. As one might metaphorically say, the Earth is like an embryo floating in space,

sensing and containing us; literature is the *amniotic fluid* nurturing science (to borrow a metaphor from Ariole). If science dares to *"listen to nature"* as Verne's critique suggests, it will go further in harmony with the biosphere.

In conclusion, this paper unites literature, philosophy, science, and African worldview into a coherent argument: sustainable innovation requires humility and balance, principles embodied in stories and myths as much as in equations. Future work could expand this approach by studying additional authors or indigenous traditions. For now, we hope this study signals that the clues to our technological future may already lie, sometimes surprisingly, in the imaginative texts of our past and in the perennial wisdom of diverse cultures.

References

Bollinger, J.-C. (2022). *Literature & Geosciences: Jules Verne's geological novels, from the 19th to the 21st century*. Comptes Rendus Géoscience, 354, 233–253.

Descartes, R. (1637). *Discours de la méthode pour bien conduire sa raison, et chercher la vérité dans les sciences* [Discourse on Method].

Hatfield, G. (2024). René Descartes. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Summer 2024 Edition). https://plato.stanford.edu/archives/sum2024/entries/descartes/

Jean-Pierre, K.-B. (2013). The contribution of the sacred in traditional African societies to environmental ethics. *Anthropologie*, 1, Article 110.

Kelbessa, W. (2022, February 16). African environmental philosophy, injustice, and policy. *Georgetown Journal of International Affairs*. https://gjia.georgetown.edu/2022/02/16/african-environmental-philosophy-environmental-injustice-and-policy/

Verne, J. (1870). *Twenty Thousand Leagues Under the Sea* (Translator A. D. White & E. B. Ives). Boston: J. R. Osgood. (Original work published 1869).