



Reconstructing an Environmental-Ethical Outlook in the Ikhwān al-Ṣafā¹

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Abstract

This paper offers a reconstructive account of an environmental-ethical outlook in the thought of the Ikhwān al-Ṣafā', a tenth- (or possibly ninth-) century group of Islamic philosophers known as the Brethren of Purity. Drawing on selected epistles from the *Rasā'il Ikhwān al-Ṣafā' wa Khullān al-Wafā'*, we argue that their Neoplatonic inspired cosmology, anthropology, and educational vision can be systematically organized into a four-principle model of hierarchical stewardship. Methodologically, the study adopts a textual-conceptual reconstruction. Contemporary categories from environmental ethics, such as intrinsic value, anthropocentrism, and ecocentrism, are used as analytical tools, without attributing these concepts anachronistically to the Ikhwān themselves. On this basis, we identify four core principles: (1) the intrinsic value of all living beings; (2) the higher yet responsibility-laden value of human beings; (3) the moral significance of ecological wholes within an organic cosmology centered on the Universal Soul (*al-nafs al-kulliyya*); and (4) an educational response to environmental disorder, understood as a crisis of both knowledge and character. The paper then considers several objections, including concerns about anthropocentrism, the limits of pre-modern metaphysics, questions of practical

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applicability, historical distance, and environmental justice. In response, we argue that the Ikhwānīan framework is best understood as a resource for critical adaptation rather than direct replication. We conclude that, despite being historically situated within a robust metaphysical system, the Ikhwān al-Ṣafā' offer a distinctive Islamic contribution to contemporary environmental ethics, one that integrates a holistic ontology, a graded conception of intrinsic value, and a sustained emphasis on moral and spiritual formation as the foundation of responsible stewardship of the natural world.

Keywords: Ikhwān al-Ṣafā'; Environmental Ethics; Environmental Philosophy; Intrinsic Value.

1. Introduction

Contemporary environmental crises are widely recognized as one of the most urgent challenges facing life on Earth. Issues such as deforestation, climate change, biodiversity loss, soil degradation, air and water pollution, and the rapid decline of marine ecosystems have far-reaching consequences for both physical and mental well-being. Their acceleration over the past century is closely tied to patterns of human activity, and in many cases has already led to irreversible ecological damage.

The urgency of this situation has been repeatedly emphasized in global forums, including the 2021 United Nations Climate Change Conference, where world leaders discussed strategies for reducing carbon emissions and limiting greenhouse gas concentrations. At the same time, it has become increasingly clear that technical and political responses alone are insufficient. Any durable solution also requires sustained ethical reflection, which has contributed to the growing importance of environmental philosophy and ethics as distinct fields of inquiry. Although environmental philosophy is a relatively recent academic discipline, questions concerning the relationship between human beings and the natural world have long occupied a central place in philosophical traditions. Within this broader intellectual history, the tenth-century thinkers known as the Ikhwān al-Ṣafā' (the Brethren of Purity) offer a particularly rich and systematic framework for rethinking humanity's place within nature. This clandestine intellectual circle, active in the tenth (or possibly ninth) century, engaged deeply with the scientific and philosophical traditions of their time. Their ideas are preserved in the *Rasā'il Ikhwān al-Ṣafā' wa Khullān al-Wafā'*, an encyclopedic collection of fifty-two epistles.

The authorship of these epistles remains uncertain, and scholars continue to debate whether they were composed by a single author or a collective group.

Their intellectual aims are also interpreted in different ways. Some scholars emphasize their concern with spiritual salvation through knowledge and purification, while others highlight their interest in moral and political reform. For example, Seyyed Hossein Nasr reads their project as an attempt to harmonize religion and philosophy while cultivating the inner capacities required for both intellectual realization and spiritual salvation. Other interpretations have associated the group with Bāṭinī Shiʿism or with strands of Muʿtazilite thought. Despite these debates, the *Rasāʾil* present a remarkably integrated intellectual vision. They draw on Pythagorean, Hermetic, Greek, Iranian, and Indian traditions, all reinterpreted within an Islamic metaphysical framework. Their cosmology emphasizes the unity, order, and interdependence of all levels of existence. The symbolic and allegorical style of the texts encourages multiple layers of interpretation, while their Neoplatonic orientation supports a strong commitment to the unity of knowledge across intellectual and spiritual domains. Within this worldview, care for nature and respect for living beings emerge as significant ethical concerns. Individual creatures, as well as ecological wholes, are treated as possessing moral significance, and education is presented as the primary means through which both individuals and society can be transformed. Despite increasing scholarly attention to the Ikhwān al-Ṣafāʾ, particularly in relation to their cosmology, anthropology, and ethical thought, most studies have focused on isolated aspects of their system. A fully integrated reconstruction of their environmental-ethical outlook remains underdeveloped.

This paper addresses that gap by asking whether a coherent environmental-ethical framework can be reconstructed from the *Rasāʾil*, and if so, what its foundational principles might be. We propose a four-principle model of “hierarchical stewardship,” according to which human beings occupy a privileged position within the cosmic order while simultaneously bearing responsibility toward non-human beings and the broader ecological system. Methodologically, the study adopts a textual–conceptual reconstruction based on close readings of selected epistles, supported by relevant secondary literature. Contemporary analytical categories, such as anthropocentrism, ecocentrism, intrinsic value, and stewardship, are employed as interpretive tools, without projecting modern conceptual frameworks onto the Ikhwān themselves.

2. Environmental Ethics and the Ikhwān al-Ṣafāʾ

Environmental ethics is a branch of philosophy that investigates the moral dimensions of human relations with the natural world, including plants, animals, ecosystems, and even non-living entities (Brennan & Lo, 2024). Although it is a relatively recent field of inquiry, it draws on much older philosophical reflections concerning moral standing and the status of nature. In classical philosophy, Aristotle and Thomas Aquinas generally regarded non-human nature as existing for human use, assigning full moral standing primarily to human beings (Desjardins, 2013, p 98). Immanuel Kant similarly restricted moral consideration to rational and autonomous agents, again, essentially humans (Kant, 2001, p 212). Jeremy Bentham, by contrast, expanded moral concern by grounding it in sentience, particularly the capacity for pleasure and pain (Desjardins, 2013, p 99).

In the twentieth century, environmental concern became more explicit and systematic, giving rise to several influential ethical frameworks (Brennan & Lo, 2024). Anthropocentrism places human interests at the center and tends to regard nature instrumentally (Kopnina et al., 2018). Biocentrism extends moral consideration to all living beings on the basis of intrinsic value (Callicott & Frodeman, 2008, p 98), while ecocentrism further expands the moral community to include ecosystems and the integrity of ecological wholes (Callicott, 2010; Pojman et al., 2017). Against this background, we argue that a distinctive environmental-ethical perspective can also be reconstructed from the thought of the Ikhwān al-Ṣafā'.

Drawing on the *Rasā'il*, the Ikhwān al-Ṣafā' present the cosmos as an ordered, interdependent whole structured through a hierarchical chain extending from God, through intellect and soul, down to nature and the sublunary realm. Within this holistic framework, balance (*i'tidāl*) and order are not merely descriptive features of reality; they also function as normative principles guiding human conduct. It is important to note that this study does not claim that the Ikhwān developed an environmental ethics in the modern disciplinary sense. Rather, it offers a reconstruction of an environmental-ethical outlook by organizing recurring ethical themes embedded in their cosmology, anthropology, and moral pedagogy. On this basis, the Ikhwān al-Ṣafā''s thought can be reconstructed around four core principles:

A. Intrinsic Value of All Living Beings

Living beings possess intrinsic worth by virtue of their metaphysical origin and their place within the cosmic order. While the metaphysical justification remains general, the *Rasā'il* most explicitly articulate this idea in discussions concerning animals and their moral standing.

B. Higher Intrinsic Value of Human Beings

Human beings occupy a higher ontological rank due to their rational and spiritual capacities. However, this elevated status implies responsibility rather than justification for domination or exploitation.

C. Moral Standing of Ecological Wholes

Ecological wholes, such as species, communities, and broader natural systems, possess ethical significance as structured expressions of the unity and integrity of the cosmic organism.

D. Educational Response to Environmental Crises

Environmental crises are ultimately rooted in crises of knowledge and moral character. Accordingly, education and awareness, combining scientific understanding with ethical and spiritual formation, are central to addressing ecological disorder. To reconstruct this outlook, we adopt a textual–conceptual method that remains attentive to the Ikhwān’s distinctive synthesis of Greek philosophy, Hermetic traditions, and Iranian and Indian intellectual influences (Emrah, 2019), as well as their overarching vision of the world as an interconnected unity (Darras, 2012, p 139). We also take seriously their commitment to the unity of knowledge and their tripartite classification of the sciences into primary, religious, and philosophical domains (Nasr, 1978, pp 41–43), in which mathematics, logic, natural science, and theology each play an essential role. On this basis, we proceed to analyze each principle in turn.

2.1. First Principle: Intrinsic Value of All Living Beings

The first principle holds that, in the thought of the Ikhwān al-Ṣafā’, all living beings possess intrinsic (non-instrumental) value by virtue of their metaphysical origin and their participation in the cosmic order. By “intrinsic value,” we mean that a being has a good of its own that is not reducible to its usefulness for others, even though it may also serve instrumental purposes. Although the Ikhwān’s cosmology encompasses the entire sublunary realm, this discussion focuses primarily on living beings, since the *Rasā’il* provide their most explicit ethically charged reflections in this domain, particularly in relation to animals. A natural starting point for this claim is the Ikhwān’s emanationist cosmology. Within a broadly Neoplatonic framework, all beings proceed from a single transcendent source: from God (the One) emanates the Universal Intellect, followed by the Universal Soul, and finally nature and the sublunary realm of generation and corruption (Ikhwān al-Ṣafā’, 1957, Vol. 3, pp 199–200; Vol. 1, pp 48–49). The Universal Soul animates the cosmos, while nature (*tabī’a*) functions as its operative power,

permeating all bodies beneath the lunar sphere (Ikhwān al-Ṣafā', 1957, Vol. 2, pp 132–133). On this view, minerals, plants, and animals are described as “artifacts” (*maṣnū'āt*) of nature, related to it in a way analogous to organs within a single living organism.

This cosmological vision is further reinforced through Pythagorean numerical symbolism. In the *Risālat al-ʿAdad*, number proceeds from unity and ultimately returns to it, and the Ikhwān extend this principle to the structure of existence itself, stating that “the nature of beings corresponds to the nature of number” (Ikhwān al-Ṣafā', 1957, Vol. 3, pp 178–179). God orders beings in a manner analogous to the unfolding of numbers from the One, such that multiplicity itself becomes a sign of divine unity and wisdom (Ikhwān al-Ṣafā', 1957, Vol. 3, pp 199–200). In this sense, what later thinkers describe as *waḥdat al-wujūd* can be seen, in a more embryonic form, as the affirmation of a shared ontological origin within a structured and meaningful plurality (Nasr, 1978, p 44). Within this framework, the Ikhwān outline a graded hierarchy of existence. Drawing again on numerical symbolism, they describe a chain of being composed of multiple levels, placing sublunary entities, minerals, plants, animals, and humans, toward the lower end of the scale (Ikhwān al-Ṣafā', 1957, Vol. 3, pp 178–179). Yet “lower” here does not imply lesser worth. Rather, these beings are understood as necessary and meaningful expressions of the Universal Soul within the material world. Their interdependence reveals the coherence of the cosmic whole. Since nature’s power permeates all bodies, sublunary beings function like organs within a living organism: differentiated, but not dispensable. As such, they are purposive constituents of a meaningful totality rather than mere instruments for external ends. The *Rasā'il* further elaborate this continuity among sublunary beings. In the treatise on minerals, the transformation of the four elements into higher forms is described as a gradual and ordered process (Ikhwān al-Ṣafā', 1957, Vol. 2, pp 87–89). The treatise on plants explains that the highest forms of minerals are seamlessly connected to the lowest forms of plants, which in turn are connected to animals, animals to humans, and humans to angels (Ikhwān al-Ṣafā', 1957, Vol. 2, pp 150–151). This Great Chain of Being is therefore not a collection of isolated categories but a continuous ontological gradient. Each level has its own perfection and mode of flourishing grounded in divine wisdom, and is not reducible to the functional purposes of another level. The treatise on animals develops this continuity further while introducing explicitly ethical considerations. It distinguishes between minerals, plants, animals, and

humans according to increasing capacities such as growth, sensation, movement, and rational speech (Ikhwān al-Ṣafā', 1957, Vol. 2, pp 178–183). It also notes that animals precede humans in temporal existence and contribute to the conditions of human life (Ikhwān al-Ṣafā', 1957, Vol. 2, p 181). While this might suggest an instrumental hierarchy, the broader metaphysical context points to a more nuanced picture: a system of teleological interdependence in which each level contributes to the whole without losing its own ontological integrity.

This interpretation is reinforced by their psychological discussions. Animals are described as sharing the five senses with human beings and are classified according to increasingly complex cognitive and sensory capacities (Ikhwān al-Ṣafā', 1957, Vol. 2, pp 396–397, 183–186). Some species, such as ants and bees, are even portrayed as possessing forms of deliberation, planning, and organized social life, suggesting structured communal intelligence (Ikhwān al-Ṣafā', 1957, Vol. 2, p 185).

The ethical implications of this view become explicit in the treatise on pleasure and pain, where animals are recognized as capable of both, understood as movements toward or away from natural equilibrium (Ikhwān al-Ṣafā', 1957, Vol. 3, pp 52–55). This establishes them as bearers of welfare and therefore as morally relevant beings. The allegorical narrative *The Case of the Animals versus Man before the King of the Jinn* further strengthens this point by giving animals a moral voice through which they protest human injustice, exploitation, and arrogance. The very structure of this narrative presupposes that animals can be wronged in a meaningful ethical sense.

Taken together, these considerations support the reconstruction of the first principle. Given (a) the emanationist cosmology in which living beings are expressions of the Universal Soul; (b) the doctrine of a continuous and unified chain of being; (c) the conception of nature as an organic and purposive whole; and (d) the attribution to animals of cognition, sensation, social organization, and the capacity for suffering, it is reasonable to conclude that, within the Ikhwān al-Ṣafā' 's framework, living beings possess intrinsic value and a basic form of moral standing.

2.2. Second Principle: Higher Intrinsic Value of Humans

The second principle holds that, within the cosmological and anthropological framework of the Ikhwān al-Ṣafā', human beings possess a higher intrinsic value than other sublunary creatures. This claim does not deny the intrinsic worth attributed to non-human beings in the first principle. Rather, it introduces a graded hierarchy within a single community of beings that are

all, in different ways, valuable. Importantly, this higher rank does not justify domination or exploitation. Instead, it points to a distinct ontological and ethical role: human beings are entrusted with greater responsibility toward non-human life and toward the cosmic order as a whole. This privileged position is grounded in three interrelated ideas: (a) the human being as the most complete image of the cosmos, a “microcosm” reflecting the “macrocosm”; (b) the unique capacity of the human soul for knowledge, virtue, and ascent toward the angelic realm; and (c) a teleological vision in which existence moves from multiplicity toward unity, a movement most fully realized in perfected human souls (Nasr, 1978, pp 92, 100).

A useful starting point is the microcosm–macrocosm analogy, which rests on the Ikhwān’s metaphysics of form and matter. In the *Risāla on Matter and Form*, they argue that diversity arises not from different kinds of matter, but from differing forms: form gives determination and perfection, while matter (*hayūlā*) serves as a shared substrate (Ikhwān al-Ṣafā’, 1957, Vol. 2, pp 5–6). From this follows a hierarchy of perfection: the more comprehensive and integrated a form is, the higher its ontological rank. In the *Risāla on the Human as a Small World*, the human being is therefore described as “more complete in structure, more perfect in form, and more comprehensive in constitution” than any other part of the physical world, hence its designation as *al-‘ālam al-ṣaghīr* (the microcosm) (Ikhwān al-Ṣafā’, 1957, Vol. 2, pp 456–457). The human body contains functions analogous to minerals, plants, and animals, while the soul reflects higher, spiritual realities.

This correspondence is mirrored in the *Risāla on the World as a Great Human*, where the cosmos is described as a single living organism (*insān kabīr*), animated by a universal soul whose powers permeate all its parts “just as the soul of one human being runs through all his bodily members” (Ikhwān al-Ṣafā’, 1957, Vol. 3, pp 212–213; Vol. 2, pp 24–25). Within this reciprocal structure, the human being occupies a distinctive position as the point where different levels of reality converge and become intelligible. It is therefore unsurprising that the Ikhwān repeatedly emphasize the superiority of the soul over the body, and regard knowledge of the soul as more noble than knowledge of bodily states (Ikhwān al-Ṣafā’, 1957, Vol. 2, pp 379–380; Vol. 3, pp 34–35).

Within the broader hierarchy of existence, the human being also occupies a pivotal intermediate station. As stated in the *Risāla on Plants*, the highest level of minerals connects to the lowest level of plants, plants to animals, animals to humans, and the highest human capacities to the lowest rank of

angels (Ikhwān al-Ṣafā', 1957, Vol. 2, pp 150–151). Human existence thus functions as a bridge between the animal and angelic realms, a point at which ascent becomes self-conscious and ethically directed. The text even addresses the human being as one “summoned to meet your Lord,” progressing through successive stages toward spiritual completion (Ikhwān al-Ṣafā', 1957, Vol. 2, pp 150–151). In this sense, the human being is uniquely capable of consciously enacting the return from multiplicity to unity (Nasr, 1978, p 100). This role becomes clearer in the Ikhwān's account of the soul's destiny. In the *Risāla on the Emergence of Particular Souls*, the body is compared to a womb, and worldly life to a developmental stage. Through knowledge and virtue, the soul reaches completion; once perfected, it separates from matter and ascends to the higher realm, joining the angelic order and perceiving realities beyond the senses (Ikhwān al-Ṣafā', 1957, Vol. 3, pp 5–7). The *Risāla on the Wisdom of Death and Life* reinforces this view, presenting the refinement of the soul and its return to God as the ultimate aim of both philosophy and prophecy (Ikhwān al-Ṣafā', 1957, Vol. 3, pp 34–36).

The epistemic dimension of human distinction is further developed in the *Risāla on the Human Capacity for Knowledge*. Interpreting the Qur'ānic narrative of Adam, the Ikhwān emphasize that the human being, formed from clay yet endowed with divine spirit, becomes a “living, knowing, capable” being, even distinguished from the angels through knowledge of “the names,” understood as the essences of things (Ikhwān al-Ṣafā', 1957, Vol. 3, pp 18–19). Knowledge is described as the life and nourishment of the soul, and human cognition is presented as spanning sensory, intellectual, and revealed forms of understanding.

Further elaboration appears in the *Risāla on the Divine and Legal Sciences*, where knowledge is classified into sensible, intelligible, and demonstrative domains, truths accessible through reasoned proof rather than sense or imagination (Ikhwān al-Ṣafā', 1957, Vol. 3, pp 401–402). Differences in belief are thus explained in terms of differences in cognitive capacity and its bodily instruments (Ikhwān al-Ṣafā', 1957, Vol. 3, pp 403–405). This reinforces the idea that human beings bear a unique responsibility for discernment, judgment, and moral orientation within the divine order. These anthropological claims are embedded in a unified cosmological vision. The *Risāla on the Heavens and the World* describes a structured universe of concentric spheres and elemental realms governed by the universal soul (Ikhwān al-Ṣafā', 1957, Vol. 2, pp 24–26). The human being, as microcosm,

reflects this structure in condensed form (Ikhwān al-Ṣafā', 1957, Vol. 2, pp 456–457). Human life is therefore understood as an upward journey toward higher levels of being and ultimately toward the divine (Ikhwān al-Ṣafā', 1957, Vol. 2, pp 150–151; Vol. 3, pp 34–36).

Finally, the allegorical narrative *Case of the Animals versus Man before the King of the Jinn* illustrates both human superiority and its ethical risks (Goodman & McGregor, 2012). The animals accuse humans of injustice and exploitation, challenging any simplistic appeal to superiority. Humans, in turn, justify their position through their eschatological responsibility, including divine promises of resurrection and judgment that are not extended to other creatures (Ikhwān al-Ṣafā', 1957, Vol. 3, pp 5–7). The narrative thus draws a clear distinction between ontological rank and moral entitlement: human superiority is not a license for domination, but a condition of heightened accountability.

Taken together, these considerations support a refined formulation of the second principle. All living beings possess intrinsic value as manifestations of the universal soul and expressions of divine wisdom. Within this shared framework, human beings occupy a higher rank due to their more comprehensive form, their capacity for universal knowledge, and their role in consciously realizing the return to unity. Properly understood, this higher status does not grant privilege in the sense of domination; rather, it intensifies responsibility toward other beings and toward the harmony of the cosmic order.

2.3. Third Principle: Moral Standing of Ecological Wholes

The third principle argues that, within the framework of the Ikhwān al-Ṣafā', moral concern is not confined to individual living beings. Larger ecological wholes, such as species, communities, climatic systems, and natural cycles, also carry evaluative and moral significance. In contemporary terms, these wholes may be understood as sites of relational integrity, whose preservation or disruption is ethically meaningful. While this vocabulary is modern, it is used here as an interpretive lens for articulating an idea already embedded in the Ikhwān's cosmology: the world is a single, living, and ordered whole, animated by a unified soul, in which large-scale structures express purpose, balance, and wisdom. A key foundation for this view is the recurring analogy of the world as a single organism or "great human." In the *Risāla on the Heavens and the World (al-samā' wa-l-ālam)*, the Ikhwān define the cosmos as comprising the heavens, the earth, and everything between them, noting that sages describe it as an *insān kabīr*. All levels of reality, celestial spheres,

elements, and generated beings, form a single body animated by one soul, whose powers permeate the cosmos just as the human soul animates the body (Ikhwān al-Ṣafā', 1957, Vol. 2, pp 24–26). This idea is developed further in the *Risāla on the Meaning of the Saying that the World Is a Great Human*, where the cosmos is analyzed in a more systematic way: a universal body (*al-jism al-kullī*), a universal soul (*al-naḥs al-kullīyya*), a governing universal intellect, and nature (*al-ṭabī'a al-kullīyya*) as the operative power within bodies. Within this structure, minerals, plants, and animals function as the “organs” of a single cosmic organism (Ikhwān al-Ṣafā', 1957, Vol. 3, pp 212–213). This is not merely a poetic metaphor. It reflects a genuine ontological commitment: higher-order properties such as balance, harmony, corruption, and integrity belong to the whole itself, emerging from the coordinated functioning of its parts. The whole, therefore, becomes a meaningful object of evaluation in its own right. This organismic vision is reinforced by the Ikhwān's account of sublunary processes, especially in the *Risāla on Generation and Corruption (al-kawn wa-l-fasād)*. Here, sublunary reality is divided into seven genera: the four elemental “mothers” (fire, air, water, earth) and three classes of generated beings, minerals, plants, and animals (Ikhwān al-Ṣafā', 1957, Vol. 2, p 52). These are not isolated categories but dynamically interconnected through continuous processes of transformation. All share a common underlying matter, differentiated by form and quality, and moving through cycles of generation and dissolution under celestial influence (Ikhwān al-Ṣafā', 1957, Vol. 2, pp 52–53). What emerges is an inherently systemic picture: a web of interlocking cycles rather than a collection of discrete, self-contained entities. This provides a natural basis for treating ecological wholes as meaningful units of analysis.

A similar perspective appears in the *Risāla on Meteorological Phenomena (al-āthār al-'ulūwiyya)*, where atmospheric events are linked to the activity of the universal soul. What natural philosophers call “nature,” the Ikhwān suggest, is in fact the manifestation of the universal soul's power throughout the sublunary world. In religious language, these powers correspond to “angels charged with preserving the world and governing creatures by God's permission” (Ikhwān al-Ṣafā', 1957, Vol. 2, pp 62–63). Phenomena such as rain, wind, and cloud formation are thus part of a purposive and ordered system that sustains life and maintains equilibrium. This attention to large-scale order is further developed in the astronomical and geographical treatises. The *Astronomy* epistle describes the nine celestial spheres and explains how their motions generate fundamental cycles such as day and

night, the seasons, and broader climatic patterns (Ikhwān al-Ṣafā', 1957, Vol. 1, pp 114–117). The *Geography* epistle presents the Earth as a unified sphere structured into climates, seas, mountains, and rivers (Ikhwān al-Ṣafā', 1957, Vol. 1, pp 158–159). Importantly, contemplation of these structures is not only intellectual but also ethical and spiritual: knowledge of cosmic order is itself a means of elevating the soul and recognizing divine wisdom within creation. Perhaps the most explicitly ecological articulation appears in the *Risāla on the Ordering of the World as a Whole* (*kayfiyyat naḍḍ al-‘ālam bi-asrih*). Here, the world is described as a layered spherical system in which natural processes unfold in continuous cycles. Water evaporates, forms clouds, returns as rain, and flows back into the seas; plants absorb elements, animals consume plants, and organic matter returns to the soil. This circulation is compared to a rotating water-wheel (*dūlāb dā'ir*), emphasizing the integrated and self-sustaining character of natural systems (Ikhwān al-Ṣafā', 1957, Vol. 4, pp 274–275). The focus is not primarily on individual entities, but on the coherence, stability, and continuity of the system as a whole.

The *Risāla on Animals* adds another dimension by portraying animal communities as structured collectivities with internal organization. Species such as ants and bees are described as cooperative societies engaged in collective labor and coordinated life (Ikhwān al-Ṣafā', 1957, Vol. 2, p 185). Such descriptions reinforce the idea that communities and species are not merely aggregates of individuals, but organized wholes embedded within wider ecological systems. Crucially, the Ikhwān explicitly link this cosmological vision to moral formation. The major cosmological treatise is said to contribute to “the reform of the soul and the refinement of character” (*iṣlāḥ al-naḥs wa tahdhīb al-akhlāq*) (Ikhwān al-Ṣafā', 1957, Vol. 2, p 24). Understanding the structure of the cosmos is therefore not a neutral intellectual activity; it shapes perception, ethics, and behavior. A well-ordered soul mirrors the harmony of the universe, while moral disorder corresponds to disruption in action and relation. If natural processes are expressions of the universal soul, and, in religious terms, of divine governance, then their disturbance cannot be ethically neutral. It becomes a disruption of an intelligible and meaningful order.

Even the Ikhwān's logical writings indirectly support this perspective by allowing predication not only of individuals but also of wholes and universals. Concepts such as balance, harmony, and corruption can

meaningfully apply to systems, climates, and cycles, reinforcing the intelligibility of ecological evaluation at the level of wholes.

In light of these considerations, the third principle can be restated more precisely. The multiplicity of the world unfolds from a single source and is organized into a graded structure of intellect, soul, nature, elements, and generated beings. The universal soul binds these levels into a unified, purposive system oriented toward order and completion. Within this framework, ecological wholes possess a form of intrinsic, though derived, value. They are not merely instrumental settings for individual life, but expressions of cosmic intelligibility and loci of divine wisdom. In contemporary terms, this amounts to attributing moral standing to ecological systems: their flourishing or degradation matters not only because of their usefulness to humans, but because they participate in the integrity, balance, and meaning of the cosmos itself.

2.4. Fourth Principle: Education as the Core Response to Environmental Crises

The fourth principle can be stated as follows: within the framework of the Ikhwān al-Ṣafā', what we now call environmental crises are, at their deepest level, crises of knowledge and character. For this reason, the most fundamental response is educational, not simply in the sense of transmitting information, but as a comprehensive process of intellectual, ethical, and spiritual formation. This educational vision unfolds as a gradual and integrated program that brings together scientific understanding, philosophical reflection, moral discipline, and spiritual cultivation. Its aim is to form individuals who can recognize both the unity and fragility of the cosmic order and act responsibly within it. In this sense, education becomes the practical medium through which the earlier principles, intrinsic value, hierarchical responsibility, and the moral standing of ecological wholes, are translated into lived action.

Although the Ikhwān do not formulate this principle in explicitly environmental terms, it can be reconstructed from their broader theory of knowledge, ethics, and da'wa (guidance and intellectual-spiritual invitation). For them, ignorance and moral corruption lie at the root of disorder, whether in the individual soul or in the wider world. Restoring balance, therefore, requires not only external reform but also an inner transformation that aligns human thought and behavior with the deeper order of reality. A useful starting point is their account of the scientific crafts (ṣanā'i' 'ilmiyya). In the seventh mathematical treatise, they distinguish

between crafts concerned with bodily matters, such as agriculture and construction, and those concerned with the soul of the learner. The ultimate aim of these sciences is explicitly defined as the reform of the soul, the refinement of character, and preparation for eternal felicity (Ikhwān al-Ṣafā', 1957, Vol. 1, p 258).

Given that human beings are composed of a transient body and a luminous, knowing soul, education must address both dimensions. It should develop practical skills needed for worldly life, while more fundamentally cultivating disciplines that purify and perfect the soul (Ikhwān al-Ṣafā', 1957, Vol. 1, pp 258–259). From this perspective, environmental stewardship becomes a particularly important expression of this dual responsibility: while the body depends on the earth for survival, the soul remains accountable for how it uses and relates to the natural world.

This dimension of stewardship is made explicit in the ninth mathematical treatise through the doctrine of vicegerency (khalīfa). God is described as having “built for His vicegerent a frame from earth... and then joined it to a noble spiritual soul,” so that human beings might cultivate the world and preserve it in proper order through various forms of governance, legal, political, philosophical, and social (Ikhwān al-Ṣafā', 1957, Vol. 1, pp 296–297). Human authority is described in expansive terms: as cultivator of the world (‘āmir ‘ālamīhi), possessor of what is in it (mālik mā fīhi), governor of its animals (sā'is ḥayawānihā), nurturer of its plants (murabbī nabātihā), extractor of its minerals (mustakhraj ma'ādinahā), and one who exercises control over what it contains (mutasallīṭ 'alā mā fīhā) (Ikhwān al-Ṣafā', 1957, Vol. 1, p 297). Yet this authority is not a license for domination. It is, rather, a form of responsibility aimed at preserving balance and order, through which the human soul itself may be refined and elevated toward angelic perfection (Ikhwān al-Ṣafā', 1957, Vol. 1, pp 297–298). Education, therefore, is both normative and practical: training in the sciences and in ethical governance (siyāsa) is directed toward a form of trusteeship over animals, plants, and minerals that mirrors divine governance and sustains cosmic harmony. This link between knowledge and moral formation is further reinforced by the Ikhwān's organismic cosmology. In the treatise on the “great human,” the cosmos is described as a single living body animated by a universal soul. Universal nature functions as the operative power of this soul, while minerals, plants, and animals serve as its organs (Ikhwān al-Ṣafā', 1957, Vol. 3, pp 212–213). Within such a vision, harming parts of the world

irresponsibly is not a neutral act; it is a disruption of a living whole to which humans themselves belong.

The comprehensive scope of education is programmatically stated in their treatise on mutual association and cooperation. Members are encouraged to maintain a space for study and dialogue, combining attention to the soul with engagement in the mathematical sciences. They are warned against rigid attachment to any single doctrine: “our view and doctrine encompasses all doctrines and gathers all sciences” (Ikhwān al-Ṣafā’, 1957, Vol. 4, p 41). Their method is to examine all things, visible and invisible, material and intellectual, as grounded in a single principle (Ikhwān al-Ṣafā’, 1957, Vol. 4, pp 41–42). Within this framework, they identify four “books” of knowledge: philosophical and scientific works; revealed scriptures; the “natural books” of the world (from celestial movements to minerals, plants, and animals as signs of the Creator); and the “divine books,” namely souls and their histories (Ikhwān al-Ṣafā’, 1957, Vol. 4, p 42). This scheme clearly supports an environmental pedagogy in which the study of nature is not peripheral but central to education.

Methodologically, the treatise on opinions and religions distinguishes between sensory, intellectual, and demonstrative divine knowledge, the latter established through rational proof (Ikhwān al-Ṣafā’, 1957, Vol. 3, pp 401–402). Demonstration (*burhān*) is described as the “measure of intellects” (p 402), while differences in belief are explained by variations in cognitive capacity and bodily conditions (pp 403–405). Applied to environmental education, this suggests a balanced approach in which empirical observation and rational inquiry are essential, but pedagogical methods must be adapted to differing intellectual and moral dispositions. On the spiritual level, the treatise on the “path to God” presents education as an awakening from ignorance through prophetic guidance (Ikhwān al-Ṣafā’, 1957, Vol. 4, p 5). The soul is likened to a mirror: when polished, it reflects truth; when clouded by vice, it distorts it (pp 5–6). The treatise on faith further distinguishes between knowledge and belief, and praises those who unite both (pp 61–63). Accordingly, any adequate response to environmental crises must cultivate both scientific understanding and a moral–spiritual disposition capable of restraining greed, excess, and negligence.

The Ikhwān also develop practical pedagogical strategies through their theory of *da‘wa*. They emphasize adapting discourse to different audiences and presenting ideas in structured, accessible ways that awaken understanding (Ikhwān al-Ṣafā’, 1957, Vol. 4, pp145–147). In their logical

writings, speech itself is described as having both mental and verbal dimensions, capable of either reforming or corrupting, like medicine when used properly, or harm when misused (Vol. 1, pp 390–391). Environmental education, therefore, is not merely informational; it is deeply formative and ethical in nature. Finally, their ethical writings ground character in both nature and upbringing. While temperament is influenced by bodily constitution, it can be shaped and corrected through education (Ikhwān al-Ṣafā', 1957, Vol. 1, pp 299–300). Sources of moral variation include humours, climate, culture, and even celestial influences, but upbringing remains the most flexible and transformative factor (p 298). This supports the view that environmentally harmful behavior must be addressed through long-term cultivation of habits and dispositions.

Modern scholarship also emphasizes that the Ikhwān understand education as a graded process, moving from mathematics and logic to natural sciences and ultimately to metaphysics and theology, each stage preparing the soul for higher understanding (Fakhry, 1983, pp 150–155; Netton, 1991, p 35). Taken together with their doctrines of vicegerency and moral reform, these ideas allow us to formulate the fourth principle more precisely: environmental disorder is fundamentally a failure of knowledge and character. The appropriate response is therefore an integrated educational program that enables individuals to (i) recognize the intrinsic value of living beings and the moral significance of ecological wholes, (ii) practice stewardship that preserves order and balance rather than undermining them, and (iii) align engagement with nature with the purification and perfection of the soul.

3. Critical Analysis of the Four Principles

The four principles reconstructed from the Ikhwān al-Ṣafā' form a broadly coherent environmental-ethical framework. The first and third principles extend moral concern beyond human beings to individual living creatures and ecological wholes, grounded in an emanationist metaphysics and an organic view of the cosmos. The second introduces a hierarchy of value in which human beings occupy a higher rank, while emphasizing responsibility rather than domination. The fourth identifies the practical mechanism through which these commitments are realized: a comprehensive educational program integrating knowledge, ethics, and spiritual formation. Taken together, these principles amount to what may be described as a form of responsible or hierarchical anthropocentrism enriched by holistic and educational dimensions. Living beings possess intrinsic value; ecological wholes have moral standing rooted in their systemic integrity; human beings

bear greater value coupled with greater responsibility; and education serves as the primary means of actualizing this responsibility. At the same time, this reconstruction raises important questions. Concerns may be raised about conceptual coherence, metaphysical assumptions, and contemporary applicability. In what follows, we address five major clusters of objections and provide corresponding responses.

3.1. Anthropocentrism and Ecocentrism

A first concern arises from a perceived tension between Principle 2 and Principle 3. On the one hand, Principle 3 attributes a form of moral standing and derived intrinsic value to ecological wholes, such as species, ecosystems, and large-scale natural systems. On the other hand, Principle 2 affirms that human beings possess a higher intrinsic value and occupy a privileged position within the cosmic hierarchy. This raises the worry that such a hierarchy ultimately subordinates ecological value to human interests, thereby reproducing an anthropocentric outlook that could, in practice, justify the extensive use or even exploitation of non-human nature.

This objection has two dimensions. First, one might argue that any hierarchical ordering of intrinsic value is incompatible with genuine ecocentrism, which typically treats the entire community of life as the primary locus of value. Second, there is a concern about interpretive consequences: hierarchical frameworks are often read in dominative terms, where higher rank is taken to authorize the instrumentalization of what lies below. Within the framework of the Ikhwān al-Ṣafā', however, both concerns can be reconsidered. Ontologically, their hierarchy is not a rigid pyramid of isolated entities, but a continuum of interdependent levels within a single living cosmos. Each level presupposes and completes the others; higher forms of existence cannot flourish without the integrity of lower ones. Together with the doctrine of a single divine origin, this interdependence resists any reading that would treat lower beings as dispensable or devoid of genuine significance.

Normatively, the texts underlying Principle 2 consistently connect human superiority with heightened responsibility rather than entitlement. Human beings are described as vicegerents (*khulafā'*), entrusted with the care of animals, plants, and minerals in accordance with divine justice and mercy, not arbitrary domination.

A more balanced reconstruction therefore understands the Ikhwān's position as a theory of graded intrinsic value combined with strong obligations of care. Human beings may occupy a higher rank due to their cognitive and

spiritual capacities, but these very capacities intensify their accountability for preserving the balance of the natural order. On this reading, the anthropocentric element of Principle 2 is internally constrained by the more inclusive commitments of Principles 1 and 3: all beings and ecological wholes possess value as expressions of the divine, and human excellence is measured in part by how faithfully it responds to that value. This interpretation aligns with strands of contemporary Islamic environmental ethics that emphasize stewardship, humility, and reverence toward all forms of life. The Ikhwān's framework is therefore neither strictly ecocentric in the modern analytical sense nor straightforwardly anthropocentric. It is better described as a stewardship model in which hierarchy generates responsibility rather than entitlement. In this sense, "anthropocentrism" and "ecocentrism" function as interpretive categories rather than historical self-descriptions.

3.2. Metaphysical Assumptions and Scientific Plausibility

A second objection concerns the metaphysical foundations of the framework. The environmental-ethical vision of the Ikhwān al-Ṣafā' is embedded in a pre-modern cosmology: a geocentric universe of concentric spheres, a four-element physics, and a hierarchical ontology grounded in emanation from the One. Critics may argue that these assumptions are historically situated, scientifically obsolete, and therefore unsuitable as a basis for contemporary ethical reflection.

Two clarifications are important here. First, many of the metaphysical motifs employed by the Ikhwān, such as emanation, the unity of existence, the microcosm, macrocosm analogy, and the organic conception of the cosmos, are not unique to their intellectual context. Related ideas appear across Neoplatonic philosophy, Abrahamic mystical traditions, and various strands of Asian thought, as well as in modern process and systems-oriented philosophies. The question, therefore, is not whether these frameworks are universally accepted, but whether their core intuitions can be meaningfully reformulated today. Second, a distinction should be made between the Ikhwān's cosmological imagery and the underlying ethical structure of their thought. While their scientific descriptions reflect the knowledge of their time, their central ethical insights do not depend on the literal truth of those models. What matters is the idea of the world as an ordered, interdependent whole, the embeddedness of human beings within that whole, and the ethical consequences of disrupting its balance. These core ideas can be translated into contemporary frameworks, such as ecology, evolutionary theory, and Earth system science, without retaining obsolete physical assumptions. In

this respect, their position resembles other philosophical traditions whose ethical value outlives their scientific premises. One need not endorse Aristotelian physics to find significance in Aristotelian ethics, nor accept pre-modern medicine to appreciate its concern for health and well-being. Likewise, the Ikhwān's cosmology can be read as a historically situated expression of enduring ideas about unity, interdependence, and responsibility, which remain open to contemporary reinterpretation.

3.3. Practical Reach and Institutional Effectiveness

A third objection concerns the practical applicability of the framework. While the four principles provide a rich conceptual foundation, they may appear too abstract to guide responses to concrete environmental challenges such as climate change, biodiversity loss, pollution, or environmental governance. Moreover, the Ikhwān al-Ṣafāʾ did not confront industrial society, global capitalism, or modern regulatory systems, and thus did not develop institutional or policy-oriented solutions. This concern operates at two levels. More generally, it reflects a familiar issue in environmental ethics: normative theories often articulate broad values, such as stewardship, justice, or respect for nature, without specifying mechanisms for implementation. More specifically, it highlights the historical limits of the Ikhwān's intellectual context, which understandably did not produce models for modern environmental governance.

Even so, Principle 4 offers an important bridge between theory and practice. By interpreting environmental degradation as a failure of knowledge and character, the Ikhwān foreground education and moral formation as essential drivers of change. A contemporary appropriation of their framework would therefore prioritize educational approaches that integrate scientific literacy about environmental systems with ethical reflection on responsibility, interdependence, and stewardship. Their emphasis on gradual instruction, audience sensitivity, integration of natural and revealed knowledge, and cultivation of virtues such as moderation and justice provides valuable guidance for shaping environmental awareness and behavior. At the same time, it is clear that education alone cannot resolve systemic environmental crises. Institutional translation is also required, through environmental law, governance structures, and collective action frameworks that embed these ethical commitments in practice. In this sense, the enduring value of the Ikhwān's contribution does not lie in offering ready-made policy solutions, but in identifying moral and educational formation as the crucial mediating link between metaphysical vision and practical transformation.

3.4. Retroactive Interpretation and Historical Distance

A fourth objection concerns the interpretive status of this reconstruction. The Ikhwān al-Ṣafā' did not write within the modern category of "environmental ethics," nor did they formulate their ideas in response to ecological crises as we understand them today. This raises an important question: does interpreting their thought in environmental-ethical terms risk an anachronistic projection? This concern calls for a methodological clarification. The present study is best understood as a reconstructive and applicative reading rather than a purely historical or exegetical one. It does not claim that the Ikhwān explicitly developed an environmental ethic in the modern sense. Rather, it argues that their cosmology, anthropology, and moral philosophy contain conceptual resources that can be systematically developed into such a framework. This kind of philosophical retrieval is a familiar and widely accepted practice. Major figures such as Aristotle, Kant, or Confucius are routinely engaged in relation to contemporary problems they never directly addressed. In a similar way, the Ikhwān's writings, especially the allegorical "Case of the Animals versus Man before the King of the Jinn", directly confront issues of human arrogance, exploitation, and the moral status of non-human life. More broadly, their sustained emphasis on balance, harmony, and the consequences of disrupting cosmic order naturally lends itself to environmental interpretation. From this perspective, the present reading does not impose external categories onto the text. Rather, it draws out implications already embedded in it and brings them into dialogue with contemporary ethical concerns.

3.5. Environmental Justice and Social Inequalities

A final objection concerns the limited explicit engagement with environmental justice and social inequality. Contemporary environmental problems are deeply entangled with economic disparity, political power, and global injustice, with marginalized communities often bearing the heaviest environmental burdens. At first glance, the Ikhwān al-Ṣafā' 's metaphysical and spiritual framework may appear insufficiently attentive to these dimensions. Here, however, an important distinction must be made. Although the Ikhwān do not articulate a modern theory of environmental justice, their writings consistently emphasize justice, balance, and the well-being of creation as a whole. Their political and ethical discussions strongly condemn oppression and stress fair distribution and social harmony.

Likewise, their cosmology frames disorder (*ikhtilāl*) as a rupture in the proper functioning of the universal order. From this perspective, extending their framework toward environmental justice is conceptually coherent. Social injustice and ecological degradation can both be understood as forms of imbalance within a single, interconnected order. A contemporary reconstruction would therefore need to make this implication explicit, integrating the Ikhwān's metaphysical vision with modern analyses of inequality, power, and environmental governance. Such an extension allows their thought to address not only abstract conceptions of "nature," but also the concrete human communities most affected by environmental harm.

4. Concluding Assessment of the Critical Discussion

Overall, critical reflection on the four principles highlights both their strengths and their limitations.

Their strength lies in the way they integrate metaphysics, ethics, and education into a unified vision of reality: a world marked by unity and intrinsic value, a graded but responsibility-oriented hierarchy of beings, and a strong emphasis on moral and spiritual formation as the basis of ethical life. Their limitations, however, are also clear. Questions remain regarding anthropocentrism, scientific plausibility, practical implementation, historical interpretation, and the explicit treatment of social justice. Yet none of these concerns decisively undermines the framework. Rather, they indicate areas where it can be refined, expanded, and translated into contemporary philosophical terms.

5. Conclusion

This paper has argued that a coherent environmental-ethical framework can be reconstructed from the thought of the Ikhwān al-Ṣafāʾ. It has organized key elements of their Neoplatonically inspired cosmology, anthropology, and educational philosophy into four interconnected principles: the intrinsic value of all living beings; the higher but responsibility-laden value of human beings; the moral standing of ecological wholes within an organically structured cosmos; and an educational model that interprets environmental crises as crises of knowledge and character. Together, these principles support what we have called a model of hierarchical stewardship, according to which humans occupy a privileged position within the cosmic order while simultaneously bearing strong ethical obligations toward non-human life and the integrity of the whole.

We have also examined several critical challenges: concerns about anthropocentrism, dependence on pre-modern metaphysics, limited

institutional applicability, risks of anachronistic interpretation, and the implicit rather than explicit treatment of environmental justice. None of these objections, however, negates the central claim. They instead point toward the need for further refinement and contextual translation.

Ultimately, the Ikhwān al-Ṣafā' offer a distinctive intellectual resource for contemporary environmental ethics. Their emphasis on unity, interdependence, graded responsibility, and moral education provides a framework that can enrich current debates about how humans ought to inhabit the natural world. Future research may further develop mid-level ethical principles, institutional implications, and justice-oriented applications grounded in this reconstructed vision.

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