

Spirituality and Science in Harmony: A Study of Dualism in Dr. A. P. J. Abdul Kalam's *Wings of Fire*

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INTRODUCTION:

Dualism in Indian philosophy is the view that reality is fundamentally composed of two distinct and separate principles. A common understanding of duality is the coexistence of two contrasting ideas, feelings, or things. *Wings of Fire*, the autobiography of Dr. A.P.J. Abdul Kalam, is not merely a chronicle of personal achievements, but a profound narrative that intertwines the realms of science and spirituality. As one of India's most revered scientists and a former President, Dr. Kalam's life stands as a testament to the belief that scientific temper and spiritual depth are not mutually exclusive but can co-exist in a meaningful and productive harmony. This research paper aims to explore the dualism present in *Wings of Fire*, a dualism that bridges practical inquiry with philosophical introspection, modern technology with ancient wisdom, and material progress with inner peace.

Throughout the text, Dr. Kalam reflects on his early influences, particularly the spiritual grounding provided by his father, a devout Muslim and an *imam*. Simultaneously, the narrative follows his evolution into one of India's foremost aerospace scientists, highlighting his involvement in the nation's missile and space programs. These two tracks, spirituality and science appear not as conflicting forces, but as complementary dimensions of his identity. His life suggests that ethical grounding and spiritual insight can enrich scientific innovation, leading to more holistic human development.

The harmony between science and spirituality in *Wings of Fire* also mirrors a broader Indian philosophical tradition, where sages and scientists have historically shared intellectual space. Dr. Kalam draws inspiration from figures like Swami Vivekananda and echoes ideas of universal harmony and divine purpose, even while engaged in highly technical scientific pursuits. This juxtaposition challenges the conventional binary between faith and reason and offers a unique lens through which to view the potential of integrated thinking.

By examining key episodes, quotes, and reflections within *Wings of Fire*, this paper seeks to analyze how Dr. Kalam reconciles the scientific worldview with spiritual values. It argues that his life and work model a balanced approach that is particularly relevant in the modern age, where rapid technological advancement often raises ethical and existential questions. The study ultimately aims to contribute to the discourse on the merging of science and spirituality, using Dr. Kalam's life as a compelling case study.

The connection of science and spirituality has been a subject of increasing scholarly interest, especially in studies exploring the lives of polymaths and thought leaders who operate across domains of rational inquiry and metaphysical belief. In the Indian context, this duality is often viewed not as contradictory but as complementary, a sentiment deeply embedded in the cultural and

philosophical traditions of the subcontinent. Dr. A.P.J. Abdul Kalam's *Wings of Fire* has attracted attention from researchers across disciplines, literary studies, philosophy, education, and leadership, precisely because it exemplifies this combination.

Scholars such as Dr. S. Radhakrishnan and Swami Vivekananda have historically written about the compatibility of scientific thinking and spiritual wisdom in the Indian tradition. The book explores Kalam's writings to argue that spiritual values such as humility, discipline, and devotion directly informed his scientific and administrative work. He says;

“I wonder why some people tend to see science as something which takes man away from God. As I look at it, the path of science can always wind through the heart. For me, science has always been the path to spiritual enrichment and self-realization.”(p.15)

Literary critics have also analyzed *Wings of Fire* from a narrative and thematic perspective. The autobiography functions not only as an inspirational text but also as a philosophical treatise that integrates Kalam's inner spiritual journey with his outer professional accomplishments. Furthermore, educational scholars have pointed out the influence of Kalam's spiritual beliefs, shaped by Islamic Sufism, Vedantic thought, and personal meditation practices on his approach to teaching and mentoring.

While traveling through Rishikesh, Kalam visits Swami Sivananda, a renowned spiritual teacher and founder of the Divine Life Society. In the book, Kalam describes Sivananda as an ascetic radiating peace and wisdom, clothed in a simple white dhoti, and surrounded by an aura of calm. During their conversation, Kalam shares his struggles with scientific work, his anxieties about technological success, and his concerns about the nation's future. Swami Sivananda listens intently and responds with a profound spiritual message: to remain detached from the outcome and to perform one's duties with sincerity and devotion. When Kalam told him about his unsuccessful attempt to join the Indian Air Force, and his long cherished desire to fly, the Swami said:

“Desire, when it steps from the heart and spirit, when it is pure and intense, possesses awesome electromagnetic energy. This energy is released into ether each night, as the mind falls into the sleep state. Each morning it returns to the conscious state reinforced with the cosmic currents.”(p. 25)

This encounter leaves a deep impact on Kalam. It reinforces his belief in the *Bhagavad Gita*'s principle of *Nishkama Karma*, action without attachment to results which he later applies to his scientific projects. Rather than being distracted by potential failure or public scrutiny, Kalam channels his energy into the process, trusting that sincere effort, aligned with moral values, will yield the right outcomes.

What makes this moment significant is that Kalam does not see spiritual wisdom as a substitute for scientific thinking but as a complement to it. The clarity, calmness, and ethical grounding offered by spiritual insight become tools that sharpen his focus, sustain his motivation, and temper his ego. This balance allows him to approach his scientific work with both intellectual precision and inner peace.

Thus, his experience at Swami Sivananda's ashram exemplifies how Kalam integrated inner spiritual discipline with outer scientific excellence, forming the foundation of his leadership style and philosophical outlook.

However, fewer studies have examined this dualism as a deliberate philosophical stance, rather than as a coincidental feature of his upbringing or personality. This paper attempts to fill that

gap by arguing that *Wings of Fire* presents a conscious, reasoned reconciliation of two worldviews that are often seen as mismatched in modern discourse. By analyzing the narrative structure, symbolic motifs, and philosophical reflections in the text, this study adds to the evolving academic conversation on the coexistence of science and spirituality, particularly through the lens of lived experience and autobiographical storytelling.

Dr. A.P.J. Abdul Kalam's early life in the coastal town of Rameswaram played a pivotal role in shaping his integrated worldview of science and spirituality. Born into a devout Muslim family in 1931, Kalam was raised in an environment where faith, simplicity, and discipline were central values. His father, Jainulabdeen, was not formally educated but was deeply spiritual, known in the community for his wisdom, generosity, and regular engagement in religious practices. His quiet strength and unwavering faith in God had a profound impact on Kalam, instilling in him a sense of humility, inner calm, and reverence for the divine. Kalam mentions:

“The famous Shiva temple, which made Rameswaram so sacred to pilgrims, was about a ten minute walk from our house...There was a very old mosque in our locality where my father would take me for evening prayers. I had not the faintest idea of the meaning of the Arabic prayers chanted, but I was totally convinced that they reached God.”(p. 4)

Thus, Kalam's early exposure to pluralistic traditions, growing up in close proximity to Hindu temples and Christian churches, fostered in him a deep respect for all religions and a belief in the unity of spiritual thought. His parents were widely regarded as an ideal couple. His mother, Ashiamma, was equally influential, nurturing his curiosity and providing a stable, emotionally supportive environment. This familial backdrop of faith, tolerance, and moral strength became the foundation upon which Kalam later built his scientific career. Rather than being in conflict, his religious upbringing encouraged reflection, discipline, and ethical responsibility, qualities that seamlessly complemented his later life as a scientist and leader. Once his father told him:

“...Every human being is a specific element within the whole of the manifest divine Being. So why be afraid of difficulties, sufferings and problems? When troubles come, try to understand the relevance of your sufferings. Adversity always presents opportunities for introspections.”(p. 5)

Throughout *Wings of Fire*, Dr. A.P.J. Abdul Kalam reflects on experiences that highlight the synthesis of spiritual conviction and scientific rigor in his life. One of the earliest examples appears in his recollection of his father's morning prayers and quiet reflection by the seashore. Kalam writes about the profound calm he felt in those moments, observing his father's faith not as blind belief but as disciplined spiritual practice. This sense of inner stillness, he notes, became a vital tool during stressful phases of his scientific career, particularly in high-pressure projects like the SLV-3 launch. One of the most significant episodes in *Wings of Fire* that reveals Dr. Kalam's inner stillness and spiritual grounding is his leadership role in the SLV-3 (Satellite Launch Vehicle-3) project. This mission marked a major milestone in India's space program and was a defining moment in Kalam's career as a scientist. The challenges he faced, technical failures, administrative pressures, and national expectations, created an environment of immense stress. Yet, Kalam's ability to remain composed focused, and strong under pressure reveals the spiritual discipline that supported his scientific rigor. He says:

“I wanted to throw all my being into the creation of the SLV. I felt as if I have discovered the path I was meant to follow, God’s mission for me and my purpose on His earth.”(p.89)

Kalam openly discusses the initial failure of the SLV-3 in 1979, an event that brought not only public embarrassment but also personal disappointment. However, instead of succumbing to frustration or blame, he chose to reflect inward, drawing strength from his spiritual practices and philosophical readings. He refers to concepts from the *Bhagavad Gita*, especially the idea of “*Karmanyevadhikaraste*”—perform your duty without attachment to results, as guiding principles that helped him maintain steadiness in moments of crisis.

In *Wings of Fire*, Kalam credits this mindset for helping him and his team recover emotionally and intellectually to ensure the successful launch of SLV-3 in 1980. His calm leadership not only inspired confidence in his colleagues but also reinforced a culture of accountability and learning. Rather than viewing setbacks as failures, he interpreted them as steps toward growth, an approach deeply influenced by his inner spiritual training.

This blend of technical perseverance and spiritual composure became a hallmark of Kalam's professional ethos. The SLV-3 episode exemplifies how inner stillness cultivated through prayer, meditation, and philosophical reflection served as a stabilizing force in his scientific journey, enabling him to lead with clarity, humility, and resilience.

Another key passage occurs during his time at the Indian Space Research Organization (ISRO), when a major project faced delays and public criticism. In *Wings of Fire*, Dr. A.P.J. Abdul Kalam offers a detailed and deeply personal account of his journey through India's premier defense and space institutions, ISRO (Indian Space Research Organization) and DRDO (Defence Research and Development Organization). His impressions of these institutions are shaped not merely by professional milestones but by a broader vision of national service, technological self-reliance, and ethical leadership.

At ISRO, where Kalam played a pivotal role in the launch of India's first Satellite Launch Vehicle (SLV-3), he describes an environment of intellectual rigor, collective teamwork, and patriotic purpose. He holds deep admiration for visionary leaders like Dr. Vikram Sarabhai, who emphasized both innovation and human values. Kalam reflects on how ISRO functioned as a crucible of both science and national idealism, where young engineers were encouraged to take risks and dream big for India. His experience at ISRO profoundly shaped his belief that scientific research must be directed toward societal benefit.

At DRDO, Kalam's role became more complex, involving leadership over defense technology projects like missile development under the Integrated Guided Missile Development Programme (IGMDP). He encountered bureaucratic challenges and systemic inactivity, but he also found opportunities to demonstrate resilience, innovation, and team-building. He shares both frustrations and triumphs, particularly the successful development of missiles like *Agni* and *Prithvi* as steps toward India's strategic autonomy.

What stands out in Kalam's narrative is his consistent commitment to combining scientific excellence with ethical responsibility. Whether navigating the technical intricacies at ISRO or the defense imperatives at DRDO, Kalam remained grounded in values of humility, national pride, and spiritual clarity. His impressions of both organizations are not limited to infrastructure or technology, but include a deep appreciation for the people and principles that guided them. He says:

“What if we did not have the technological might of the Western countries, we knew we had to attain that might, and this determination was our driving force.”(p.113)

This quote reflects Kalam's belief in self-reliance and national determination. Lacking the technological advantages of the West, India's scientists were driven by purpose and resolve, turning limitation into motivation to achieve indigenous innovation and global respect through persistent effort.

Perhaps, most revealing is Kalam's description of his interactions with spiritual leaders like Pramukh Swami Maharaj and his admiration for Swami Vivekananda. These relationships were not ornamental; they deeply influenced his thoughts on ethics, purpose, and national development. Such moments in *Wings of Fire* reveal that, for Kalam, spirituality was not a retreat from scientific reasoning but a source of resilience, vision, and moral clarity. They offer compelling evidence of how deeply intertwined these two dimensions were in his life and legacy.

CONCLUSION:

Dr. A.P.J. Abdul Kalam's *Wings of Fire* stands as a powerful testament to the harmonious coexistence of science and spirituality in a world often divided between the two. Through his life experiences, from his humble beginnings in Rameswaram to his leadership in India's space and defense programs, Kalam demonstrates that scientific achievement need not come at the cost of spiritual depth. On the contrary, his inner stillness, rooted in religious tolerance, meditation, and ethical grounding, became the very force that sustained his scientific vision through trials and setbacks.

This dualism, where the logical and the metaphysical, the empirical and the intuitive, exist in balance, offers a model of integrated thinking that is increasingly relevant in today's complex and fragmented world. Kalam's reflections, particularly his reverence for the *Bhagavad Gita*, *Quran*, and his encounters with spiritual leaders like Swami Sivananda, reveal that spiritual conviction can deepen one's sense of purpose in scientific pursuits.

In *Wings of Fire*, science is not stripped of soul, and spirituality is not devoid of reason. Instead, the two operate in a dynamic interplay that enriches both the individual and the society he serves. Kalam championed an **integrated approach**, which acts as a solution to this dualism by bridging the gap between the spiritual and scientific, and advocating for a holistic worldview that unifies these seemingly disparate fields.

REFERENCES:

1. Kalam, Abdul APJ. *Wings of Fire*, Universities Press, Hyderabad, 1999, p.15
2. *Ibid*, p.25
3. *Ibid*, p.04
4. *Ibid*, p.05
5. *Ibid*, p.89
6. *Ibid*, p.113