



HUMAN BODY, EXISTENCE, AND DESIGN:

An Insight into Yellapragada SubbaRow’s Philosophy

INTRODUCTION



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Fig. 1. Pablo Picasso, *Science and Charity*, 1897. Oil on canvas, 197 cm × 250 cm (78 in × 98.2 in). Reprinted by permission of Museu Picasso, Barcelona, Spain.

Pablo Picasso’s masterpiece, “Science and Charity,” was created during a tumultuous period marked by a cholera outbreak in his native Malaga, Spain. This work is notably one of three thematically linked paintings focusing on disease, a subject that held personal significance for Picasso, as his own sister succumbed to the illness in her infancy. The painting is a testament to his artistic response

to personal and communal tragedy, encapsulating both the sorrow of loss and the resilience in the face of widespread suffering.

The painting was conceived during an era when advancements in science were burgeoning, offering new hope in combating diseases. This period saw science emerging as a focal point of public and personal interest, a theme reflected in Picasso's work. The artist's personal anguish over the loss of his sister, a casualty of inadequate medical resources despite available treatments, is palpable. This experience, accentuated by the family's inability to afford a proper burial, profoundly influenced Picasso's artistic journey. His art became a medium for social commentary, as epitomized in a poignant quote from one of his later works: "At the end of the road death waits for everyone, even though the rich go in carriages and the poor on foot" (Katz and Khoshbin 2016).

In periods of crisis, artists often shift their focus to human struggles and emotions. Picasso's painting skillfully contrasts two figures: an authoritative, detached medical professional and a compassionate, empathetic nun. The doctor, absorbed in clinically assessing the patient's condition, represents the advancements and heightened status of medicine during an era with limited effective treatments. Conversely, the nun embodies emotional support and care. This juxtaposition highlights the essential role of medicine in enhancing human health and quality of life, and the deep-seated trust society places in medical intervention during health emergencies.

While the cholera outbreak at the end of the 19th century affected limited areas, during the COVID-19 pandemic the world grappled with a health crisis of an unprecedented scale. Medicine, historically humanity's bulwark against disease, was suddenly confronted with a novel and formidable challenge: the global outbreak of an unknown virus. The unexpected nature of this crisis stretched the capabilities of the medical industry, primarily functioning as a preventive measure, whose efficacy was under scrutiny. The virus's rapid mutation and poorly understood behavior resulted in widespread chaos in hospitals and homes alike, underscoring the criticality of the medical industry's response. In this era, dominated by the forces of finance and technology, a significant shift in societal reaction to such emergencies was

observed, which in itself gave rise to diverse and complex crises. In India—but quite possibly in numerous other countries—some of the problems aggravating the situation could be summed up as follows:

- India, along with other nations, confronted the pandemic's challenges. It was noted that in an effort to alleviate public panic, there was a tendency to expedite medical research processes. This situation led to compromises in the rigorous standards typically upheld in medical research. The urgency to address the crisis at hand necessitated swift action, which impacted the depth and thoroughness of research protocols.
- The imposition of unrealistic deadlines by administrative bodies during the pandemic potentially weakened certain preventive measures. This pressure led to the pharmaceutical industry condensing the duration of their clinical trials. Such acceleration, while expediting product availability, also raised concerns about the thoroughness of the testing process. This situation was further complicated by the potential for increased profits, which may have influenced the industry's willingness to hasten these trials.
- During the pandemic, the market witnessed a surge in the sale of numerous unregulated supplements and products, marketed as "immunity boosters." However, the veracity of such claims remained unverifiable due to the absence of a standardized measure of immunity in modern medicine. This lack of a definitive benchmark to assess immunity levels rendered the efficacy of these products uncertain and open to question.
- The lack of stringent regulation over alternative medicines and health supplements became notable. This situation allowed some manufacturers and distributors to exploit consumer vulnerabilities, often making exaggerated health claims in media advertisements. These claims, lacking robust scientific validation, capitalized on the public's urgent desire for health protection and solutions, raising concerns about the ethicality and credibility of such marketing practices.

- The Drugs Controller General of India (DCGI) exercised unprecedented authority during the pandemic, granting 'restricted emergency use' authorization to several drugs for treating the disease. This marked the first instance of such powers being deployed. However, the scientific community has raised questions about the criteria used for these approvals. Critics have further voiced concerns regarding the persuasiveness of the manufacturers' data on the efficacy of these drugs, suggesting that the evidence presented to support their effectiveness remains unconvincing.
- In the clinical evaluation of Remdesivir, a broad-spectrum antiviral medication, some efficacy was observed in patients with moderate to severe forms of the disease. While there was a trend indicating potential reduction in mortality, this observation did not achieve statistical significance. These findings provided a basis for considering the use of Remdesivir in clinical settings, albeit with recognition of its marginal benefits and the consideration of its high cost.
- The deployment of the drug Remdesivir in clinical practice was carried out without the backing of a sufficient number of clinical trials, leading to its unrestricted use. Additionally, there have been reports suggesting the occurrence of illegal trading of this drug, highlighting the complexities and challenges faced in the distribution and regulation of pharmaceuticals during the pandemic.
- There were allegations that certain human clinical trials for COVID-19 treatments commenced even before the completion of requisite animal trials, a practice that contravenes numerous ethical standards. This deviation from established research protocols raised significant concerns regarding the safety and ethical implications of such accelerated clinical testing.

The COVID-19 pandemic inadvertently created a scenario where various industries capitalized on the crisis, driven by a relentless pursuit of technological advancement and financial gain, often at the expense of responsible action. This technological surge has mechanized our interactions with life, overshadowing the humane

aspects of existence. Human experiences, once richly biological and personal, are now often reduced to mere medical encounters. Our empirical tools and methods in study and growth, while propelling development, risk detaching us from the fundamental, evolutionary essence of human life. The predominant focus on linear development and economic growth as benchmarks of national progress has led to a diminished emphasis on the humane side of living. Science, often perceived as a strictly objective discipline, ideally should blend scientific rigor with a sensitivity towards life's nuances, fostering a more compassionate and holistic approach to progress.

In his novel *Being Mortal*, Atul Gawande offers the readers an extensive exploration of human anatomy and of the complexities within medical sciences. Gawande critically examines the transformation of doctors into medical professionals who may perceive their patients more as cases than as individuals with lives. A significant focus of the book is on medicine's approach to aging and death, highlighting its limitations in situations where diseases are incurable. The author argues that in such scenarios, medical practices can sometimes veer into inhumanity, straying from the noble ideals of service traditionally associated with the profession. The book poignantly addresses the challenges of maintaining dignity for those nearing the end of life, emphasizing the responsibility of doctors in this sensitive process.

The advancement of modern medical science, while technologically empowering doctors, has also introduced a human disconnect in the practice. This paper seeks to advocate for a more empathetic healthcare system. It does so by exploring the life and work of Yellapragada SubbaRow, an Indian-born biochemist who studied and worked in the United States. The paper intends to illustrate the notable, almost romantic leaps he made in his field, reflected in an American author's tribute: "Yet because he lived, you may be alive and well today. Because he lived you may live longer" (Gupta 1998: 5). Exploring the intersections of science and humanism in SubbaRow's life, I attempt to reignite the 'romance of science' and foreground a more empathetic scientific outlook in medical practice.

The initial section of this essay, titled “Ethical Design,” emphasizes the significance of ethics in both humanizing a discipline and enriching life. This part will explore the crucial role humane aspects play, adding a layer of depth to the rational and linear perspectives of life. It will particularly examine how Yellapragada SubbaRow’s ethical stance was a vital element in rendering his life noteworthy, meriting a biographical record. In this section I delve into how SubbaRow crafted an ethical framework through his consciously sensitive choices, and the impact of these decisions on his professional and personal life.

The second section, “The Irrational Romantic,” positions Yellapragada SubbaRow as a scientist whose romantic inclinations led him to significant contributions in biochemistry, driven by a collective concern for humanity. This section will focus on the romantic beliefs that shaped SubbaRow’s scientific identity. It will explore his journey beyond the confines of narrow logic and reductionist boundaries, viewing the human body as an intricate system characterized by dynamic interactions and dependencies. This approach argues for a non-linear understanding of the human body, recognizing it as a complex interplay of mass and matter, necessitating a creative and holistic response to life.

THE ETHICAL DESIGN

John Heskett, in his work *Design: A Very Short Introduction*, posits that design embodies a fundamental aspect of the human condition, serving as a pivotal determinant of life’s quality. He asserts, “one of the basic characteristics of what it is to be human, and an essential determinant of the quality of human life” (Heskett 2002: 2). The term “design,” while frequently employed in a broad spectrum of contexts, transcends any singular definition. Heskett elucidates this notion by drawing an analogy to the word “love,” stating, “it is rather like the word ‘love’, the meaning of which radically shifts depending upon who is using it, to whom it is applied, and in what context” (Heskett 2002: 3). This comparison highlights the fluidity and subjective interpretation inherent in the concept of design. With such a view in mind, my inquiry then extends to the specific nature of design as conceptualized by SubbaRow in his lifetime. An examination of his actions, when analyzed in a coherent man-

ner, reveals the emergence of distinctive patterns, which have subsequently established certain standards that merit rigorous scrutiny, academic study, and practical application in life.

If one adopts the thesis that the concept of design, when viewed through an ethical and philosophical lens, transcends mere human expression, imbuing existence with a deeper, more nuanced dimension, they will also agree that lives that are guided by ethical principles inherently possess aesthetic significance, suggesting that the realm of design is intimately connected with moral and ethical considerations. Richard Eldridge, in his scholarly article “Aesthetics and Ethics,” articulates this intersection by suggesting that both disciplines engage extensively in “various strategies for locating and identifying the relevant special facts that are tracked by judgements of value, pre-eminently judgements of beauty and artistic goodness, and judgements of duty and goodness of character” (Eldridge 2003: 722). This perspective prompts a reflective inquiry into the ethical decisions made by SubbaRow, and into how these choices intricately wove an aesthetic tapestry throughout the fabric of his life.

The essence of design, as argued here, is not confined to its tangible instruments or structural manifestations; rather, it represents a dynamic interplay between subjective human choices and cognitive processes, significantly enriching the aesthetic quality of life. This notion is explored in Robert Frost’s poem “Design,” where he delves into a meditation on the existential themes that bind the living world. Frost’s vivid depiction of a “dimpled spider, fat and white” (Frost 2016: 207), ensconced upon a white heal-all and clasping a moth, serves as a metaphorical lens through which he examines life’s complex patterns. Through these evocative images, Frost seeks to decipher the underlying “dark design”—be it the inevitability of death or the natural predation cycle—thereby endeavoring to uncover the interconnectedness of life’s greater forces and the overarching philosophical design that governs existence. Frost observes:

What brought the the kindred spider to that height,
Then steered the white moth thither in the night?
What but design of darkness to appall?—
If design govern in the thing so small. (Frost 2016:207)

Here, the poet underscores the omnipresence of design, even in the minutiae of nature, suggesting a deliberate orchestration behind seemingly random events. This reflection sets the stage for a deeper exploration of Yellapragada SubbaRow's life choices, particularly his unwavering commitment to the collective advancement of scientific knowledge, prioritizing ethical implications and societal welfare over personal or commercial gain. His journey from an initial curiosity about the divine and its connection to humanity to a more profound ethical responsibility towards his fellow beings marks a significant evolution in his worldview. This transition underscores a shift from a purely speculative inquiry to a more actionable, ethically driven approach to science and life. Sikharam Prasanna Kumara Gupta, in his biographical account of SubbaRow, delves into this transformation, critically assessing the decisions and motivations that guided the latter's contributions to science and humanity. Gupta's analysis thus extends beyond biography, seeking not only to chronicle SubbaRow's achievements but also to understand the ethical framework within which he operated, thereby offering insights into the complex interplay between personal beliefs, scientific inquiry, and ethical responsibility. Gupta opens his insights into SubbaRow's philosophy by asking several fundamental questions:

What did he want to get out of life and to what end should he devote his life? What should be, as he put it, the "prime" motive of his life? The political emancipation of his people, the treatment of the sick, the acquisition of the highest knowledge to share it with fellow beings? But should not one have a thought for oneself? How about making millions like Henry Ford? Why not just marry a nice girl, have no children and lead a peaceful contented life? (Gupta 1998: 15)

The journey of life, replete with its manifold dilemmas, necessitates that individuals navigate through a labyrinth of choices. Which road one takes is of primary importance. SubbaRow "took the one less travelled by / and that has made all the difference" (Frost 2016: 133).

For instance, in examining the professional dynamics between Yellapragada SubbaRow and Lederle Laboratories, a nuanced understanding emerges, revealing a complex interplay between the biochemist's altruistic aspirations and the commercial imperatives of the pharmaceutical industry. Despite maintain-

ing a positive rapport with the administrative echelons of Lederle, SubbaRow frequently encountered ideological divergences, particularly in relation to his profound commitment to advancing medical science for the betterment of humanity. This dedication often led to conflicts with the company's strategic objectives to solidify its market presence. The issue of patent rights, customarily attributed to the inventor in the name of the corporation, serves as a focal point of contention. SubbaRow's principled stance on inventorship is emblematic of his ethical convictions, as he consistently disavowed personal recognition for his innovations, asserting, "I do not consider myself an inventor [...] Don't put my name on unless the attorneys think it's going to help something" (Gupta 1998: 120). This statement underscores SubbaRow's disinterest in personal accolades and highlights his primary concern for the broader application of scientific discoveries. Furthermore, the paucity of documentary evidence substantiating SubbaRow's contributions accentuates the challenges in fully acknowledging his scientific legacy. The ambivalent commentary on one of the patents, describing SubbaRow as "a genius" in his scientific endeavors yet "poor" in business acumen (Gupta 1998: 120), encapsulates the prevailing perception of his persona within the industry.

This dichotomy reflects the broader discourse on the intersection of scientific innovation and commercial viability, a theme that is particularly important in the context of SubbaRow's career. His profound comprehension of the intricate dynamics prevalent within the industrial sector underscored his critical awareness of the inherent tensions between corporate objectives and intellectual autonomy. He recognized that the industry's imperative to monopolize ideas and innovations for its own proliferation often clashed with the broader ethos of scientific inquiry and discovery. SubbaRow's stance was encapsulated in his critique of the prevailing corporate culture, where he posited, "The philosophy of control over the worker's ideas had bad implications" (Gupta 1998: 128), thereby highlighting the detrimental consequences of such an approach on creative and intellectual freedom. His professional engagement with Lederle Laboratories exemplified a departure from conventional corporate relationships, eschewing formal agreements in favor of a "friendly arrangement" that allowed him

the flexibility to maintain his academic affiliations, notably with Harvard (Gupta 1998: 105). This arrangement underscored SubbaRow's commitment to a collaborative ethos that transcended the rigid confines of contractual obligations, fostering an environment conducive to scientific exploration and innovation. He left Lederle to work further, with half the former salary, but more funding for research.

Upon his departure from Lederle, SubbaRow's reflections, "What do I care what label you put on a bottle? That is of no interest to me" (Gupta 1998: 105), encapsulate the ideological rift between his scientific aspirations and the commercial priorities of the pharmaceutical industry. This split reflects the broader struggle faced by researchers in reconciling the pursuit of knowledge and scientific advancement with the capitalist imperatives of profit maximization. SubbaRow's decision to continue his research endeavors with reduced remuneration but increased funding for research signifies a deliberate choice to prioritize the intrinsic value of scientific discovery over financial gain, thereby embodying the quintessential conflict between academic integrity and commercial interests in the realm of scientific research.

Scientific discoveries transcend the efforts of individuals, embodying the collective spirit of humanity's pursuit of knowledge. This principle is exemplified in the collaborative work of SubbaRow, who, alongside his team, built upon the foundation laid by prior discoveries, leading to innovations he humbly never claimed as solely his own. The film *Ek Doctor ki Maut* [A Doctor's Death], directed by Tapan Sinha, illustrates this notion through the character of Dr. Deepankar. Faced with obstruction by the Health Department, which resulted in his relocation to a remote village, Dr. Deepankar finds himself estranged from the essential collaborative network and resources that were available in Calcutta, which hinders his research capabilities. In a candid conversation with his wife, Seema, he asserts: "Research *kisi ek admi ka kaam thodi hai*. It is teamwork" – "research is not the endeavor of a lone individual. It is teamwork" (Sinha 1990: 01:12:45–01:12:55). This narrative underscores the inherent communal nature of research and innovation, which relies on the synergistic contributions of diverse minds and talents.

In his monograph *Truth and Beauty: Aesthetics and Motivations in Science*, Subrahmanyam Chandrasekhar invokes a citation from Godfrey Harold Hardy, who, in his *A Mathematician's Apology*, addresses the collaborative nature inherent in the scientific community's quest for truth (Chandrasekhar 1992: 14). In a self-demeaning fashion, Hardy delineates the characteristics of an authentic scientist, emphasizing the communal and altruistic motivations that underpin scientific inquiry thus:

The case for my life, then, or for that of anyone else who has been a mathematician in the same sense in which I have been one, is this: that I have added something to knowledge, and helped others to add more; and that these somethings have a value which differs in degree only, and not in kind, from that of the creations of the great mathematicians, or any of the other artists, great or small, who have left some kind of memorial behind them. (Hardy 1967: 151)

In *Everything is Relative: And Other Fables from Science and Technology*, Tony Rothman elucidates the concept that scientific progress is not the achievement of isolated individuals but rather the culmination of collective efforts from numerous researchers. Rothman metaphorically describes those perceived as the primary contributors to scientific advancements as an "optical illusion" (Rothman 2003: xiv), challenging the notion of singular achievement in the realm of science. In the Preface, he articulates this thought thus: "We remember only he who carries the torch past the finish line. But, unlike a race tracker, the course of science is not straight, or even circular. As every researcher knows: You Only Get the Right Answer After You've Made Every Possible Mistake" (Rothman 2003: xiii). Furthermore, Rothman posits that "Scientific success cannot always be translated into commercial profits" (Rothman 2003: 128), highlighting the distinction between academic achievements and their potential economic implications.

Discussing his perspective on wealth, he remarked, "I was born with nothing and I shall die with nothing. Each year I try to give away all I make so that at the end of the year my books are cleared" (Rothman 2003: 268). His ambition extended to financially supporting the educational and other essential needs of four individuals, reflecting a commitment to prioritizing scientific advancement and communal welfare over personal accumulation of wealth. This

inclination towards altruism, before delving into the profound inquiries about humanity's spiritual connections, underscores a profound sense of duty towards the collective well-being of society.

The prevailing contemporary viewpoint might interpret such actions as philanthropic gestures, a perspective shaped by the compartmentalized view of life dominant in modern society. However, in SubbaRow's actions, we discern a fundamental obligation inherent in our collective human existence, suggesting that such ethical conduct is not merely optional but an integral aspect of being. This contrasts sharply with the prevalent ethos of hyper-individualism, which often eschews ethical considerations in favor of personal gain, leading to a disconnect from our intrinsic identification with the human race as a unified entity. Yet, in the times when quantification, logic, reason, and measurable parameters have become the tools of verification, the unseen beauty of ethical design struggles to survive.¹

Embracing the beauty of the human mind and the moral substratum of human existence, SubbaRow affirms the notion of people as entities capable of intricate thought pattern, thereby underscoring the significance of autonomy within the spiritual collective. He elucidates this concept thus: "In this church each of us has perfect freedom of thought. There is no creed but a common dedication to serve mankind. We do not agree to think alike, but we all alike agree to think" (Gupta 1998: 262). This statement encapsulates SubbaRow's vision of individual cognition coupled with ethical accountability, shaping his life's philosophy. He advocates for the nurturing of independent thought processes, anchored by a collective moral obligation towards the betterment of humanity, thereby crafting a blueprint for living that harmonizes personal intellect with communal service.

1. In his *Ethics: A Very Short Introduction*, Simon Blackburn posits that rational discourse holds little sway in the realm of ethics, highlighting a contemporary challenge where the tangible metrics of logic, reason, and quantification dominate our validation processes, often overshadowing the intangible yet critical aspects of ethical principles. He underscores the struggle for ethical considerations to maintain their relevance and influence in a landscape increasingly governed by empirical verification and individualistic values (Blackburn 2002).

A life imbued with romantic zeal underscores the significance of poetic sensibility, which is essential not merely for a specific discipline but for the enrichment of life itself. Shakespeare, poetry, love, and romance constitute integral threads of life's aesthetic fabric. It was SubbaRow's poetic sensibility and his deliberate navigation through a romantic trajectory that lent a distinctly scientific dimension to his endeavors in the realm of science. Life, in its essence, is a philosophical pursuit actively engaged with passion in the search for truth. When philosophy is applied in practice, it transcends into the realm of romance, characterized by its capacity to embrace irrational leaps.

The philosophical underpinning is deemed essential for navigating the romantic endeavors that characterize the seemingly irrational journey of humanity. This section endeavors to examine the unconventional choices made by SubbaRow, which elude logical justification through reason alone and represent preferences that transcend the normative understanding of his era. As Keats suggests in "Ode to a Grecian Urn," "beyond reason lies the realm of unheard melodies" (Keats 1900: 234). SubbaRow's journey, transcending reason, becomes an expedition of poetic sensibility and scientific fervor, and thus his choices align his intellectual trajectory with the essence of romanticism.

The artificial demarcations imposed by humans, which delineate boundaries, stand in contrast to the inherent unity of the human race. Robert Frost, in his poem "Mending Wall," interrogates these man-made barriers that serve to claim or exclude territories, voicing his doubts in the famous line: "Something there is that doesn't love a wall" (Frost 2016: 15). Acts of transcending these fabricated divisions enable one to connect with others beyond the confines of societal constructs. The pandemic illustrated how the scientific pursuits of various nations transformed into a race to achieve medical breakthroughs first, thereby fostering a sense of national triumph at the expense of collaborative research efforts. SubbaRow, in his actions, repudiated such divisions, opting instead to transcend geographical and religious boundaries in pursuit of a more inclusive and unified approach to scientific inquiry.

Philip Martin's film *Einstein and Eddington*, set against the backdrop of World War I, narrates the compelling story of two eminent scientists who transcended national confines in pursuit of universal scientific truths. In the tumultuous milieu of warfare, the collaborative ethos of Einstein and Eddington resonated more profoundly than the discord of conflict. Einstein, resisting political coercion, declined to endorse a manifesto aligning German scientific endeavors with military objectives. Eddington went even further when he declared before the scrutinizing committee that “[w]hatever [they] might think of German military action. It has got nothing to do with German science” (Martin 44:15–44:22), thereby defending the autonomy of scientific inquiry from political and military affiliations. He further asserted: “The perceived truth of science takes us beyond hatred. It is the best of us” (Martin 1:00:09–1:00:22), emphasizing the transcendent and unifying capacity of scientific discovery.

Eddington, man of reason, renowned for his precision in measurement, and Einstein, an ideational romantic, celebrated for his conceptual ingenuity, together forged a pivotal synthesis within the spatio-temporal domain. Notably, it was Eddington who played a crucial role in empirically validating Einstein's theory of relativity, a fact that is not widely acknowledged. Eddington encapsulated the essence of their scientific pursuit by stating, “we will be scientists at work. We'll be looking at the poetry of existence” (Martin 1:40–1:47), highlighting the beauty of scientific exploration and the intrinsically poetic dimension of existence.

Possessing a scientific mindset often confines one to a realm of certainties, yet SubbaRow perceived the necessity to explore beyond conventional boundaries, postulating that life might have originated from extraterrestrial sources animating liquid crystals. This contemplation led him to reflect on the “Will of the Infinite” (Gupta 1998: 261), which idea rendered his awareness of the constraints of scientific endeavor even more palpable. SubbaRow states clearly that “[b]eing a scientist is discouraging at times. We only prolong life—we don't deepen it” (Gupta 1998: 264). This philosophical inclination propelled him to investigate the human body beyond mere causal relationships, recognizing that its existence defies rational explanation, with uncertainty and approximations serving as the primary means of understanding.

Upon his arrival in America, SubbaRow encountered the challenges of being perceived as an outsider in a land renowned for its opportunities. As Gupta reports, Dr. J.C. Aub of Massachusetts General Hospital observed that SubbaRow was “a foreigner at a time when Americans were very American [...] and did not appreciate foreigners” (Gupta 1998: 34), highlighting the social barriers he faced due to his ethnicity. Despite these obstacles, SubbaRow’s dedication to scientific inquiry enabled him to transcend these ‘unnatural boundaries,’ but throughout his life he aspired towards an ideal world devoid of racial hierarchies, envisioning a future where “the whole world feels as one, and the superiority and inferiority of races disappear” (Gupta 1998: 39).

In Honoré de Balzac’s *The Unknown Masterpieces*, Frenhofer, the protagonist, shares a profound insight into the essence of artistic creation, stating that “[d]rawing gives you the skeleton, the anatomical framework, the color puts life into it” (Balzac 2000: 26). This assertion metaphorically extends to the concept of romance, which imbues the mere physical essence of human beings with vitality, transcending a purely mechanistic interpretation of life. Thus, engaging with reality through a dynamic—even if physiological—lens renders the human experience a *romantic experience*, as opposed to mere *anatomical existence*.

SubbaRow believed in the inner beauty of existence. Faith, globally, held a significant place in the intellectual landscape of this thinker-scientist. He expounded on this subject in one of his letters. “[To] me,” he wrote, “religion is a dynamic subject rather than a static code of established principles. To me it is an internal experience, a sort of unfolding self-revelation piece by piece” (Gupta 1998: 265). This perspective emphasizes his personal, and ever-evolving, relationship with faith, energizing introspection and gradual self-discovery, rather than adherence to a rigid set of dogmas. His understanding of human existence went beyond the five senses. SubbaRow resists the scientific logic of the post-Descartian West by leaping into faith in the unseen and unproven *inner sense*. He accepts that, “at one point it was hard for me to conceive that man acquired an inner spirit and nature and transcending himself, while science assumed that he is just another step in evolution” (Gupta 1998: 266). As the scholar’s biographer asserts, “SubbaRow had to be and was like a maestro

who divided his time conducting several orchestras which played not just one kind of music but the whole range from classical symphonies to jazz improvisation” (Gupta 1998: 150).

Comparable to Johann Sebastian Bach, a musician of unparalleled prowess renowned for his timeless and universally revered compositions, SubbaRow’s contributions hold a universal significance. Bach, celebrated for his mastery over the organ and his ability to conjure harmony from every piece, is acclaimed for his natural creativity. His captivating fugues garnered widespread admiration, earning him respect and honor. One could posit that “the natural” in the German master’s art, affecting his concept of *composition*, is a manifestation of the *design*, integral to human evolution, embodying transcendence. Figures like Bach and SubbaRow, whose art is fueled by the power of an engaged and conscious mind, exemplify the dynamic interplay between creativity and the pursuit of abstract concepts, be it transcendence or entropy.

In the realm of science, as in music, there occurs a creation of enduring combinations, where the artist seeks to achieve a form of immortality through their work. This endeavor to transform the transient into the eternal is the essence of creativity, bringing with it profound joy. The pursuit of alleviating human suffering and pain transcends the here-and-now to yield outcomes that are celebrated by civilizations. Whether in music, arts, or science, the impact of creative endeavors on the betterment of humanity is always profound—as is that of human indifference.

The poem “Musée des Beaux Arts” by W.H. Auden, which draws inspiration from Pieter Bruegel’s painting *Landscape with the Fall of Icarus*, poignantly addresses the apathy displayed by individuals towards the suffering of their peers. Bruegel’s work, capturing the erosion of empathetic responses among humans, resonates with Auden’s sensitivity. In his poetic insight into society’s detached demeanor, Auden critically reflects on the dispassion of the modern era, lamenting human indifference through his verse:

About suffering they were never wrong,
The old Masters: how well they understood
Its human position; how it takes place
While someone else is eating or opening a window or just
walking dully along; (Auden 1991: 1-5)



Fig. 2. Pieter Bruegel the Elder, *Landscape with the Fall of Icarus*, ca. 1560. Oil on canvas, 73.5 cm x 112 cm (28.9 in x 44 in). Royal Museums of Fine Arts of Belgium, Brussels. Public domain, via Wikimedia Commons.

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The contrast between those who endure suffering and those who remain apathetic towards it engenders a division in their respective stances, thereby amplifying the disparity in societal sensibilities. In referencing Bruegel's depiction of Icarus's demise, Auden expands upon the theme by illustrating the prevalent disregard as an emblematic trait of a degenerating society. The ploughman, who might have been a witness to Icarus's fall, exhibits a detachment, indicative of a narrow-minded outlook. Similarly, the passing ship overlooks the event, and Icarus, being swallowed by the sea, is shunned by the self-absorbed populace. Paradoxically, while mythological discourses celebrate the allegorical dimension of Icarus's tragic death, the individual (human) tragedy seems to be, at best, of secondary importance.

Auden invokes the wisdom of the "old masters," or artists from bygone eras, to reflect on the nature of human suffering, positioning the tragedy of Icarus not as an isolated incident but as a lamentable commentary on the society and the human condition. The decline of moral values becomes apparent when individuals begin to valorize the darker aspects of human nature, accepting them as inborn characteristics, thereby undermining human dignity. This moral ambiguity complicates ethical considerations surrounding human existence, relegating inherent goodness

to a subordinate role. Through his poem, Auden underscores this notion, suggesting a pervasive indifference towards the fundamental value of life, and the decline of empathy. And, despite that, life goes on:

Anyhow in a corner, some untidy spot
Where the dogs go on with their doggy life and the torturer's horse
Scratches its innocent behind on a tree (Auden 1991: 47)

In contrast to the unassuming nature of animals, men and women who live self-absorbed lives, confined by their own limited perspectives or by the consequences of their egotistic choices, are “the torturers,” culpable for depriving existence of its inherent beauty, of the romance. Both Auden and SubbaRow understand that the imperative for individuals to transcend their personal confines and to dedicate themselves to the broader welfare of humanity is the *sine-qua-non* condition of a harmonious, rewarding, life.

CONCLUSION

Yellapragada SubbaRow's philosophical framework appears to posit the notion of an “irrational romance” as an integral facet of human existence, advocating for an engagement with life that transcends conventional, quantifiable experiences. Within this paradigm, rigidly defined systems are viewed as inadequate for encompassing the infinite and profound dimensions that sustain the continuity of life. For SubbaRow, conventional endpoints are merely the inception for exploring the boundless possibilities of existence. His perception of the human body and life finds resonance in Walt Whitman's “I Sing the Body Electric,” where the poet challenges conventional understandings of the human condition and inquires into the sense of human existence. Whitman queries:

And if those who defile the living are as bad as they who defile the dead?
And if the body does not do fully as much as the soul?
And if the body were not the soul, what is the soul? (Whitman 1933: 81)

Like in Whitman, also in SubbaRow's philosophy the evolution of the human civilization cannot be reduced to a mere linear

progression and perhaps this is the reason why, like Whitman-the-poet, also SubbaRow-the-biochemist, prioritizing the well-being of people whom his work serves over the monetary interests of the pharmaceutical industry, invites one to perform a profound ontological examination of the human condition. Especially in the context of the COVID-19 pandemic, which, as a global crisis, has laid bare the limitations of rigidly structured systems, Yellapragada SubbaRow's thought seems to provide guidelines for the 21st century world facing the complexities and uncertainties inherent in such challenges. The COVID-19 experience also demonstrated the tangibility of the imperative of embracing a more holistic and adaptable approach to life—one recognizing the interconnectedness and indeterminacy that underpin the continuity of human existence. This iterative process of learning, adaptation, and resilience mirrors SubbaRow's perspective on life as a journey of infinite exploration, in which science may mark new beginnings in the continuous struggle for a meaningful, poetic, existence.

Abstract: In his eponymous poem, Robert Frost conceptualizes design as a fundamental aspect of human existence, exploring the interplay between life's grand forces and the underlying philosophical structure of existence. This notion is paralleled in the human body, viewed as a living embodiment of design, encompassing both external appearance and internal complexity. Biomedical science, particularly significant during the pandemic, has reshaped our comprehension of the human body, influencing lifestyle and societal perceptions. Yellapragada SubbaRow, an Indian-born American biochemist, made groundbreaking contributions to medical science, including the development of methotrexate for cancer treatment, the application of folic acid in prenatal care, and the creation of a versatile antibiotic. These advancements, alongside the pandemic-induced shift in societal outlook, have altered the approach to human health and wellness. In the context of the COVID-19 pandemic, which has drawn the world's attention to the ethical and aesthetic dimensions of biomedical practice, SubbaRow's contributions may serve as excellent exemplars of integrating scientific innovation with philosophical inquiry, advocating for an approach that harmonizes scientific rigor with ethical integrity to foster civilizational progress. The study contends that design transcends mere tools and structures, embodying the fusion of human perception and intellect, which drives creativity and innovation essential for human evolution. Through examining SubbaRow's philosophy, this article seeks to elucidate the post-pandemic paradigm shift in human existence and its ethical implications.

Keywords: human body, design, ethics, human existence, Yellapragada SubbaRow

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