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Speaking from Within Science: Vatican II's Legacy in John Paul II's *Letter to George Coyne*

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Abstract: This study examines how the Second Vatican Council's teaching on science finds a mature and influential expression in John Paul II's "Letter to Reverend George V. Coyne, S.J., Director of the Vatican Observatory" (hereafter cited as *Letter to Coyne*). The Council affirmed the autonomy of the sciences, encouraged dialogue with contemporary culture, and called for renewed theological engagement with a world shaped by scientific inquiry. The *Letter to Coyne* develops these principles with greater clarity and precision and is well-suited to the scientific community because it begins from within the scientific outlook and speaks in a manner that resonates with the concerns and methods of scientists. For this reason, it becomes a particularly effective medium for transmitting the message of Vatican II to those for whom scientific inquiry is a daily practice. The *Letter* presents a vision of complementary competences between theology and the natural sciences, proposes that theology benefit from methodological insights of scientific work, and articulates a model of mutual purification in which each discipline contributes to the integrity of the other. The study also situates the *Letter* within John Paul II's intellectual formation and the circumstances of its composition. Finally, it suggests that the text has contributed to an intellectual climate more favorable to interdisciplinary research in fields such as cognitive science and artificial intelligence.

Keywords: science, theology, hermeneutics, image of the world, scientific method

The period when the Second Vatican Council was in session (1962–1965) coincided with the unparalleled development of science. In physics, the discovery of the cosmic microwave background (1965) provided the first decisive evidence for the Big Bang. Meanwhile, Roger Penrose proved his black hole singularity theorem (1965), showing that gravitational collapse generically produces real singularities hidden behind event horizons. Particle physics was transformed by the introduction of the quark model (1964), which revealed the deeper structure of matter. In biology, researchers deciphered major parts of the genetic code (1961–1965) and determined the full structure of the transfer RNA (1965), establishing how DNA instructions are translated into proteins and launching the modern era of molecular biology. These discoveries, together with the scientific advances of the previous decades, led to the reshaping of the picture of the world understood as the set of commonly held beliefs on the structure and the history of the Universe (e.g., Liana 2010). If a single novel feature of this emerging picture were to be named as the most distinctive, it would be the shift from the static to the dynamic view of the temporal characteristics of the Universe (e.g., Heller 2003c). Undoubtedly, this scientific progress contributed

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immensely to the rapid transformation of society and culture in the second half of the 20th century and made the call of John XXIII to align the ecclesiastical milieu with the ensuing changes all the more important.

The purpose of this article is to investigate the dissemination of the Vatican II's response to the development of science by tracking how the pertinent conciliar tenets are echoed and developed in an important document issued by John Paul II in 1988 on the relations between science and religion known as the "Letter to Reverend George V. Coyne, S.J., Director of the Vatican Observatory" (John Paul II 2000) (hereafter cited as *Letter to Coyne*). The reason this particular document is selected in this article is its unique and broad impact on the scientific community, as was clearly indicated by Michał Heller. He maintains that in contrast to John Paul II's encyclical *Fides et ratio*, which counts as John Paul II's principal statement on the relations between science and religion, the *Letter to Coyne* is written from "within science" rather than from its "outside" as viewed by philosophers and theologians (Heller 2003a, 12; cf. Wszołek 2010). For this reason, the *Letter* is particularly apt for communicating the Church's affirmative stance toward scientific inquiry beyond ecclesiastical circles and for countering the widespread perception that the Church stands in opposition to scientific progress and to the transformations that science brings to contemporary culture.

1. The Council and Its Legacy

Like any other major ecclesiastical event, Vatican II did not engage with such an influential domain of human intellectual life as contemporary science suddenly by decree or vote. Rather, the Council affirmed ideas that had matured over decades in the minds of individual bishops and theological experts who brought into the conciliar venue the fruits of their long study and reflection. Several leading conciliar theologians, including Karl Rahner (1961) and Joseph Ratzinger (2004, 174–77), fostered a marked openness toward dialogue with the scientific worldview. While a detailed examination of these interactions exceeds the scope of this study, one example clearly illustrates how a scientific idea filtered into conciliar thought. It is the French Jesuit Pierre Teilhard de Chardin, whose distinctive influence stems from his attempt to integrate the theory of evolution into a grand theological vision in which the history of the universe converges with the history of the final coming of Christ (Teilhard de Chardin 2008). Despite his bold claims, de Chardin influenced Vatican II only indirectly. By the early 1960s, many bishops and experts were familiar with his vision of an evolving universe and of humanity growing in historical consciousness (e.g., Putz 2005; Lind 2023; Ratzinger 2004, 236–38; Rahner 2002). This outlook helped shape the atmosphere in which the Council adopted a more dynamic idea of the human

condition and a more positive view of scientific and cultural development, especially in the Pastoral Constitution on the Church in the Modern World *Gaudium et Spes* (Flannery 1981d). The Council did not explicitly use Teilhard's specific language, yet its readiness to speak of change and progress reflects a climate of thought to which his work had contributed.

It turns out that identifying purely Teilhardian motives as well other areas of Vatican II's engagement with contemporary science has already been the subject of studies carried out by John F. Haught (2009) and Job Kozhamthadam (2007). Haught observes that although *Gaudium et spes* never mentions Teilhard de Chardin by name, the document's most innovative affirmations, especially those found in paragraphs 5 and 21, clearly echo his pioneering integration of Christian faith with an evolutionary image of the world. In particular, paragraph 5 makes the famous assertion that humanity has moved from a rather static concept of reality to a more dynamic evolutionary one and that this shift requires new efforts of analysis and synthesis. This corresponds to Teilhard's conviction that the universe is an unfinished creation whose ongoing development must reshape Christian theology. Paragraph 21 of *Gaudium et spes* stipulates that Christian hope for the final fulfillment of history does not diminish but rather strengthens the importance of human duties in the present, a point that Teilhard had long stressed in his claim that eschatological hope becomes an incentive to responsibly preserve and manage the Earth's resources.

As Haught points out, decades before the Councilde de Chardin had already articulated the need to reframe doctrine within the story of a cosmos still in the process of becoming. Haught observes that de Chardin's major works that appeared after his death were widely read among theologians such as Rahner and Henri de Lubac, whose contribution to the spirit of Vatican II is paramount. Even Ratzinger, whom Haught does not mention, later noted that the draft text of *Gaudium et spes* showed traces of what he called the Teilhardian theme that Christianity means greater progress, an insight that further confirms Teilhard's indirect presence in the conciliar atmosphere (e.g., Ratzinger 2009, 144). Teilhard's emphasis on the forward-driving dynamics of creation, the gradual convergence of humanity within a growing noosphere, and the cosmic Christ drawing the Universe toward its fulfillment provides a conceptual background for these key conciliar assertions. Thus, the optimism of *Gaudium et spes* about scientific progress, its affirmation of the world as the arena of God's ongoing creative action and its presentation of Christian hope as a fresh incentive for responsible engagement in history reflect, at least indirectly, Teilhard's distinctive synthesis of modern science and Christian eschatology which the Council implicitly received when it adopted an evolutionary horizon for the Catholic thought.

Kozhamthadam's study provides a comprehensive account of the way *Gaudium et spes* and related conciliar texts engage with modern science by situating these affirmations within the larger pastoral and intellectual objectives of Vatican II. In discussing paragraphs 4 and 5 of *Gaudium et spes* he stresses the Council's recognition

that contemporary intellectual formation is decisively shaped by the mathematical and natural sciences and that technology has acquired a growing predominance in practical life. He highlights the famous conciliar statement contained in paragraph 5 that the human race has moved from a static concept of reality to a dynamic and evolutionary one and that this transition has generated new questions that require renewed efforts of analysis and synthesis. For Kozhamthadam, these observations show that Council's openness to science does not represent a discontinuity with the Christian tradition, but it expresses a deliberate effort to present the Church's message in a manner adapted to contemporary conditions.

Kozhamthadam further draws attention to paragraph 62 of *Gaudium et spes* where the Council affirms that recent studies and findings in science, history, and philosophy raise new questions on the nature of life and demand new theological investigations, while insisting that the substance of the ancient doctrine remains unchanged. He understands this paragraph as an expression of the central aim of *aggiornamento*, which seeks neither rupture nor adaptation by superficial reformulation but a substantive engagement with the intellectual world shaped by scientific progress. The Council seeks a balanced relationship between the scientific and the religious aspects of human existence, and this balance is a recurring theme in Kozhamthadam's interpretation.

Another significant emphasis in Kozhamthadam's study is the methodological development represented by the Council's formal acknowledgment of the autonomy of the sciences. Paragraph 59 of *Gaudium et spes* asserts that the arts and sciences are to be permitted to operate according to their own proper principles and methods, and the Council affirms the legitimate autonomy of human culture. This affirmation is grounded in paragraph 36, which states that created things are endowed with their own stability, truth, goodness, proper laws and order, and that scientific investigation conducted in a genuinely scientific manner never truly conflicts with faith. The same paragraph also admits with notable candor that Christians have not always respected this rightful independence and that this failure has led many to believe that faith and science are opposed. For Kozhamthadam these statements mark a deliberate shift by the Council toward mutual respect and dialogue. He also notes the conciliar caution concerning scientism. Paragraph 57 observes that the methods of the sciences may be wrongly taken as the supreme rule for discovering the ultimate truths and that such an attitude can generate the false impression that human beings are sufficient unto themselves. The Council therefore distinguishes the valid achievements of science from its possible misuses without diminishing its fundamentally positive appraisal of scientific inquiry.

Kozhamthadam also highlights Vatican II's positive evaluation of scientific and technological progress. Paragraph 57 of *Gaudium et spes* declares that human ingenuity has produced astonishing inventions and that when rightly used, they bring solid nourishment to the human family. This activity is interpreted as a genuine

fulfillment of the Divine mandate. When human beings develop the Earth and participate in social life, they carry out the design of God manifested at the beginning of time. The Council, therefore, presents scientific creativity as a meaningful participation in God's ongoing work of creation.

Next, Kozhamthadam takes up the pastoral implications of this renewed appreciation of science. Paragraphs 57 and 58 of *Gaudium et spes* acknowledge the dispositions cultivated by scientific practice, such as dedication to truth, cooperation, solidarity, and responsibility. They affirm that these values can prepare the ground for the acceptance of the Word of God. Paragraph 62 encourages pastors to make appropriate use of psychology, sociology, and other secular sciences so that the faithful may grow in maturity of faith. This pastoral concern extends to the Church's wider educational mission in two other important conciliar documents. Paragraph 9 of the Declaration on Christian Education *Gravissimum Educationis* (Flannery 1981a) stresses the importance of scientific and technical training in schools, and paragraph 15 of the Decree on the Training of Priests *Optatam Totius* (Flannery 1981b) stipulates that seminarians become familiar with contemporary philosophical and scientific developments. In this way, scientific training becomes an integral part of the Church's educational and pastoral outreach.

Kozhamthadam also emphasizes the Council's conviction that scientific developments stimulate theology itself. Paragraph 62 of *Gaudium et spes* affirms that new discoveries raise new questions that call for renewed theological inquiry. The same paragraph encourages collaboration between theologians and experts in other disciplines and urges theologians to be up to date with the current state of scientific knowledge. For Kozhamthadam, this recognition constitutes a decisive opening toward sustained and constructive engagement between theology and the sciences. He further notes that the "Closing Message to Men of Thought and Science" issued at the final session of Vatican II is the Council's only text addressed directly to scientists (Second Vatican Council 1965a). In this text, Paul VI greets scientists as companions in the search for truth and expresses a desire for sustained collaboration grounded in mutual respect. Through these interconnected observations, Kozhamthadam concludes that Vatican II acknowledges the decisive role of modern science in shaping contemporary culture and that the Council seeks to present the Church's teaching in continuity with this transformed intellectual horizon. The *aggiornamento* initiated by Vatican II, therefore, fosters a constructive dialogue in which the Church and the scientific community work together in the service of human and cosmic development.

Although the Dogmatic Constitution *Dei Verbum* is a treatise on the Divine Revelation (Flannery 1981c), it articulates several important theological principles with broad methodological implications that dispose theology toward dialogue with the sciences. At its foundation, the constitution affirms in paragraph 2 that God freely reveals himself and makes known the hidden purpose of his will in a way that engages

human understanding, while in paragraphs 5 and 8, it states that the Holy Spirit brings faith to completion and leads believers toward an ever-deeper understanding of revelation. Revelation presupposes a real and ordered creation, as paragraph 3 teaches that God, through the Word, creates all things, keeps them in existence, and gives an enduring witness to himself in created realities. This affirmation of a stable intelligible cosmos supports the view that created realities can be investigated with confidence through disciplined human inquiry.

Dei verbum further develops a scriptural theology that opens up hermeneutical space for scientific insight. In paragraph 11, it teaches that the sacred writings under divine inspiration teach without error that truth which God willed to be set down for the sake of our salvation, and that the human authors wrote as true authors making use of their own powers and abilities. Paragraph 12 adds that interpreters must attend carefully to the intention of the sacred writers by considering the historical circumstances in which each text arose, the literary forms employed, and the circumstances of the authors' own time and culture. Paragraph 13 then states that the Divine Word is expressed in truly human language adapted to human limitations in a manner analogous to the Incarnation. Taken together, these principles allow interpreters to distinguish the inspired salvific message from the cosmological frameworks that ancient authors naturally presupposed. Moreover, paragraphs 10 and 12 insist that Scripture must be read with attention to the content and unity of the whole Bible and interpreted in harmony with the living Tradition and teaching office of the Church. According to paragraphs 23 and 24, such interpretation demands sustained work by scholars and students of sacred theology since sacred theology rests on the written word of God and the study of the sacred page is, as it were, the soul of theology. Through its central tenets, *Dei verbum* offers a vision of truth and revelation that is naturally compatible with responsible scientific investigation and provides a hermeneutical foundation for constructive dialogue between theology and the natural sciences.

2. John Paul II and the Origins of the *Letter to Coyne*

Issuing a document such as the *Letter to Coyne* presupposes a mind with a marked sensibility to the value of the scientific enterprise. Long before Vatican II articulated the rightful autonomy of the sciences and the need for a renewed dialogue between faith and scientific culture, Karol Wojtyła had been formed within an intellectual environment conducive to the transmission of the conciliar vision of science into the life of the Church (e.g., Grygiel 2024). His years in Kraków, reaching back to 1953, allowed him to see some elements of this vision already put into practice as he remained in continual contact with physicists whose intellectual curiosity and openness shaped his own understanding of the search for truth (Nowina-Konopka 2020).

These interactions created in him a disposition of respect for scientific inquiry and a readiness to enter into dialogue with it through the exploration of theologically relevant metaphysical implications of contemporary physics. Their discussions involved such fundamental issues as the nature of existence, the structure of matter, the meaning of physical laws, the philosophical status of quantum theory, the way language expresses reality, and the problem of time (Janik 2005). Wojtyła's philosophical training allowed him to converse with them in depth and to show that philosophical reasoning can open paths that scientific method cannot reach, while at the same time acknowledging that scientific research contributes genuine insight into the created world. The intellectual milieu of Kraków taught him that science makes the world known in ways that invite theological attention and that the Church may profit from the intellectual culture that science promotes. After he had been elected a pope, he carried this intellectual posture forward by regularly inviting scientists and philosophers to open interdisciplinary summer meetings in Castel Gandolfo.

Two factors are particularly important for understanding the background and development of the *Letter to Coyne*. The first factor is related to the rapid acceleration of the in-depth studies of the relations between science and theology in the 1980s carried out by scientists, theologians, and philosophers of both Catholic and non-Catholic provenience, uniting in a fruitful dialogue. This large group includes figures such as Ian G. Barbour (1974), Arthur R. Peacocke (1979), Coyne (1998), and the two scholars from Poland: Heller (1981) and Józef Życiński (1985, 1988). The second factor involves initiatives taken directly by John Paul II. The origin and the publication of the *Letter* coincided with the process of the ultimate resolution of the Galileo case, which was launched by John Paul II in his address to the Pontifical Academy of Sciences in 1979 on the 100th anniversary of the birth of Albert Einstein (Giovanni Paolo II 1979). As a result, a special commission was formed to investigate the matter, and its works were completed in 1992 (e.g., Coyne 2005).

The direct initiative of John Paul II that gave origin to the *Letter to Coyne* is his wish to mark the 300th anniversary of the publication of Isaac Newton's most famous work entitled *Philosophiae Naturalis Principia Mathematica*. In preparation for this jubilee, the pope asked the Vatican Observatory to organize a major international symposium that would bring together scientists, theologians, and philosophers for a serious reflection on the relation between scientific understanding and faith. The symposium took place in Castel Gandolfo in 1987 (Heller et al. 2016, 296–300). John Paul II wished to address the symposium's final session with a substantial reflection on science and faith. For this purpose, he asked the Observatory to prepare a draft text, and a working group was formed, which included Heller and Życiński.

While in his closing speech, the pope used a different text, the original one was published on June 1, 1988, under the title "Letter to Reverend George V. Coyne, S.J., Director of the Vatican Observatory." It presented a clear and confident vision for dialogue between science and theology. It affirmed the autonomy of the sciences, stated

that neither science nor religion should dominate the other, and encouraged theologians to learn from contemporary discoveries. For many scholars, this *Letter* became the single most important modern papal statement on the relation between science and faith. This assessment has been echoed in a broad range of English-language studies on the dialogue between science and religion, where the *Letter to Coyne* is frequently cited as a key reference point for understanding John Paul II's approach to the relationship between theology and the natural sciences (Russell, Stoeger, and Coyne 1990; Russell 2011; Tanzella-Nitti 2024). In this literature, the *Letter* is commonly situated within the wider intellectual activity of the Vatican Observatory and treated as a programmatic text for subsequent interdisciplinary engagement.

3. The Council and Beyond

Building on the conciliar themes identified above, namely the autonomy of the sciences (*GS* 36, 59), theology's engagement with contemporary knowledge (*GS 62*), the hermeneutical principles of *Dei verbum* (*DV* 11–13), and the unity of truth coupled with caution against scientism (*GS* 57), *Letter to Coyne* develops these insights with greater methodological precision and extends the vision of *Gaudium et spes* and *Dei verbum* into new conceptual territory shaped by the realities of contemporary science. It offers a mature restatement of the Church's engagement with science, and it displays a new intellectual disposition as well as a new firmness in delineating the respective competences of theology and scientific inquiry.

The first area where the *Letter to Coyne* builds on Vatican II concerns the autonomy of scientific research. *Gaudium et spes* affirms that the sciences possess their own proper methods and must be granted legitimate autonomy within their own sphere (*GS* 36, 59). The *Letter* takes up this principle and renders it into a clear rule regarding the limits of theology, insisting that theology and science must not overstep the boundaries of their proper competence and that their options do not include isolation. It further states that the Church does not judge the truth or falsity of scientific theories, since this belongs to the internal procedures of the scientific community. While Vatican II articulated the independence of the sciences in general terms, the *Letter* expresses this insight as a definite methodological boundary: theology should not intrude into scientific explanation but is instead called to respect the particular competence of scientists who pursue their inquiries according to rigorous empirical and rational standards. The *Letter* thus advances the conciliar affirmation into a more articulated account of disciplinary differentiation and complementary competence.

The second area of development concerns the intellectual framework within which theology interprets the world. Vatican II encouraged theology to draw upon contemporary advances in human knowledge and called for renewed engagement

with the intellectual culture of the age. The *Letter to Coyne* goes further by proposing the need for a scientifically informed metaphysics that can help theology express its doctrines in categories emerging from a deepened understanding of the workings of the universe. In particular, the *Letter* recalls the medieval appropriation of Aristotelian natural philosophy as a historical model and asks whether contemporary scientific developments do not challenge theology "far more deeply" than Aristotle once did. This openness, it suggests, should extend as far as the development of a scientifically motivated metaphysical framework that is recognizable in a scientific age and, at the same time, capable of sustaining and considerably deepening insight into the mysteries of the faith of the Church. This represents a marked evolution of the conciliar theme of intellectual *aggiornamento*, articulated with a clarity and urgency not found in Vatican II.

The third area concerns concrete engagement with specific scientific fields. Vatican II noted that modern science influences culture and shapes human self-understanding, but it spoke in general terms of the transition to a dynamic picture of the universe. *Dei verbum* affirmed that the biblical authors expressed revealed truth through the cultural forms of their time and that Scripture therefore requires interpretation attentive to historical context and literary forms. The *Letter to Coyne* takes this further by considering particular scientific disciplines and asking how they may illuminate theological questions. Just as the ancient cosmologies of the Near East were purified and integrated into the opening chapters of Genesis, so contemporary cosmology and evolutionary theory may shed new light on areas of theological inquiry such as creation, theological anthropology, Christology, and eschatology, thereby fostering the development of doctrine in light of a universe vast in age and scale. The *Letter* itself raises this possibility in interrogative form when it asks whether contemporary cosmology and the theory of evolution might offer new perspectives on creation, anthropology, and eschatology. In this way, it moves from the general conciliar affirmation of the value of scientific progress to a more detailed consideration of how contemporary scientific insights might enrich fundamental theological themes and promote doctrinal development. This movement represents a significant elaboration of the conciliar impetus and positions theology to address the scientific worldview not merely with apologetic concern, but with intellectual curiosity and theological attentiveness.

The fourth area concerns theological methodology itself. While Vatican II encouraged theology to attend to the findings of the sciences, it did not reflect explicitly on scientific inquiry as a mode of knowing. The *Letter to Coyne* introduces this dimension by asking whether theology might learn from the epistemological discipline of the sciences, particularly from their use of models and their recognition of the provisional character of explanatory frameworks. This is not a call for theology to imitate empirical procedures but an invitation to acknowledge the limits of its formulations and to approach doctrine as an ongoing exploration of mystery rather

than as an exhaustive description. In this way, the *Letter* clearly advances beyond Vatican II by foregrounding the epistemological virtues implicit in scientific practice as resources for theological reflection.

A final and especially influential development in the *Letter to Coyne* concerns the theme of mutual purification. Vatican II had affirmed the unity of truth and the compatibility of faith and reason, but it had not expressly articulated a reciprocal critical relationship between science and religion. This relationship comes to a better focus in the famous metaphor of *amalgam* proposed by Rahner uniting both variable and invariable elements "the truths which from the dogmatic point of view are absolutely binding can be expressed and handed down by means of ideas (propagated *de facto* at a given period in time by means of models and accepted patterns of reasoning), conveyed inseparably with the basic doctrinal statement, and later on considered as having no binding power or even false." (Rahner 1977, 6) The *Letter* gives this principle a dynamic form by famously asserting that "science can purify religion from error and superstition and that religion can purify science from idolatry and false absolutes." This formulation grants each discipline a constructive role in the maturation of the other. While science demythologizes theology by constantly realigning its statements with the most accurate knowledge of the workings of the Universe, theology prevents science from turning its outcomes into absolutes that aspire to the ultimate explanations of the Universe. Thus, the formulation elevates the dialogue between theology and science to a level of mutual responsibility where each partner is capable of contributing to the integrity of human understanding. This is perhaps the most distinctive development beyond Vatican II, and it reveals the *Letter*'s vision of a relationship marked by intellectual humility and shared pursuit of truth.

Conclusions

In conclusion, the analysis presented here demonstrates that the *Letter to Coyne* constitutes a significant extension of the conciliar principles articulated by Vatican II. It takes the Council's call for respectful dialogue with the modern world and elaborates it into a coherent program for constructive and critical engagement with contemporary science. It proposes a theological approach that is confident in the truth of revelation, deeply attentive to the insights of the sciences and unafraid to revise inherited conceptual frameworks when fidelity to the Gospel requires new modes of expression. As such the *Letter* stands as a mature fruit of Vatican II and a key resource for any theology that seeks to remain faithful to the tradition, while speaking to a scientific age with clarity and hope. By taking its unique point of commencement from within science, the *Letter* turns into a very efficient channel of transmitting the conciliar pronouncements to the secular scientific world, not in

a passive repetitive manner but with significant deepening and precision so that for those whose language is that of science, the theological message of Vatican II can be properly conveyed. Interestingly enough, the *Letter* puts considerable emphasis on the method of theology, suggesting that in addition to assimilating the scientific worldview into its discourse, theology could profit from certain methodological insights of the sciences. This has been succinctly reaffirmed by Heller, who, in answering the famous question of Edwin Schrödinger as to which achievements of science have best helped the religious outlook of the world, asserts that it is its method (Heller 2003b, 166). John Polkinghorne (2007, 15) has reframed this outcome in more precise philosophical terms by placing both science and theology under a common umbrella of *critical realism* to reflect the common denominator with which the two disciplines operate in the pursuit of truth.

In addition to turning the message of Vatican II into a coherent framework of mutual enrichment of science and theology, the *Letter to Coyne* spans yet another dimension of disseminating this message to the world of science by contributing an intellectual climate for a proliferation of research that relates these two disciplines in view of the most recent developments of cognitive science (e.g., Newberg 2018; Murphy 2006) and artificial intelligence (e.g., Singler and Watts 2024). It turns out that it was John Paul II, who made a particularly decisive step in facing the outcomes of the theory of evolution in the spirit of what he laid out in the *Letter* as he spoke to the Pontifical Academy of Sciences on October 22, 1996 (John Paul II 1998). He recognized the vast accumulation of evidence supporting evolutionary biology and stated that the theory should be treated as more than a hypothesis. At the same time, he held that the human person possesses a spiritual dimension that cannot be reduced to material processes. This distinction between the biological continuity of life and the spiritual uniqueness of the human being reflected the very balance promoted by Vatican II in its call to respect the insights of science while safeguarding the full truth of the human person. With these outcomes in hand, one clearly sees that both science and theology pursue different dimensions of the same truth, whereby believers and scientists do not have to stay opposed but can easily enter into a fruitful space of common understanding.

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