

Original Article

Marshall McLuhan, Marian Theology, and the Form of Divine Communication

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Abstract

This article explores the theological implications of Marshall McLuhan's dictum "the medium is the message" in relation to Marian theology, aiming to advance a more embodied understanding of divine communication. Grounded in the theoretical framework of media theory and sacramental theology, the study argues that Mary, traditionally viewed by many as the passive conduit for the Incarnation, must be reappraised as an active, constitutive medium whose personhood, assent, and presence shape the divine message. Using a qualitative and hermeneutic methodology, the article synthesizes patristic insights, dogmatic Marian doctrines, and McLuhan's communication philosophy to interrogate how form especially embodied form, conditions theological meaning. Findings indicate that reducing Mary to a mere envelope or biological vessel impoverishes our understanding of the Incarnation and obscures the sacramental logic of revelation. Instead, Marian personhood emerges as integral to the content of salvation history. The conclusion highlights the need to reclaim the relational, incarnational, and affective dimensions of divine communication, especially in a digital age that privileges content over embodiment. The article recommends that theologians and communicators re-engage with Marian theology not only devotionally but as a corrective lens for understanding mediated revelation. Mary's embodied fiat, her Jewish identity, and maternal role are not theological ornaments but essential to the message God conveys in Christ. Therefore, rethinking Marian theology through McLuhan's insight offers a compelling framework for sacramental anthropology and contemporary Christian communication.

Introduction

In the evolving discourse on communication and theology, Marshall McLuhan's now-famous dictum "the medium is the message" remains a radical point of departure. With this phrase, McLuhan (1964) challenges the conventional view that the content of a message is its primary bearer of meaning. Instead, he posits that the form or medium by which content is transmitted has a profound influence on how the message is perceived, received, and even understood. A book, a television broadcast, or an Instagram reel each shapes the message it conveys not only in delivery but in substance. In a world saturated with forms of mediated reality, McLuhan's insight provokes theologians to consider how divine revelation itself might be conditioned by the very media through which God chooses to communicate with humanity.

McLuhan's thinking, grounded in both media theory and Catholic sacramentality, offers fertile ground for theological reflection. His Catholic worldview was not incidental but foundational to his

communication theory. As McLuhan himself admitted, "I wouldn't have seen it if I hadn't believed it." His understanding of the sacraments as visible signs of invisible grace resonates deeply with the incarnational logic of Christian theology (Cavallin, 2021). In a sacramental cosmos, God's communication is not merely verbal or abstract; it is enfleshed, embodied, and sensory. The Incarnation itself the Word becoming flesh is the most paradigmatic form of divine communication, where the medium (Christ's humanity) and the message (God's salvific will) are inseparably united.

It is within this framework that the figure of the Blessed Virgin Mary must be reconsidered. Traditionally seen as the "envelope" or vehicle through which Christ entered the world, Mary has sometimes been theologically underappreciated or reduced to a functional womb. However, McLuhan's insight compels us to move beyond such reductive metaphors. If the medium indeed shapes the message, then Mary's person, virtues, consent, and presence are integral to the very content of the salvific message. Her fiat, "Let it be to me according to your word" (Luke 1:38), is not a mere acquiescence but an active

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theological moment that mediates divine self-revelation. Her humanity, her maternity, and her unique cooperation with God form the texture and tone of the Incarnate Word.

In patristic theology, Mary was often called the "New Eve," a title that not only affirms her participation in salvation history but also establishes a typological relationship between her and the Church. St. Irenaeus (Against Heresies, c. 180 AD) argued that "the knot of Eve's disobedience was loosed by the obedience of Mary." In this way, Mary is more than a passive medium; she is a participatory agent through whom redemption begins to unfold. By embodying divine will in her flesh, Mary becomes a living sign—what McLuhan might call a "hot medium"—that both communicates and transforms the recipient.

This incarnational and Marian lens has been revived in recent theological studies. Theologians like D. Stephen Long (2020) and Matthew Levering (2022) argue that Marian theology offers a critical corrective to modern instrumental views of communication. Mary is not merely a delivery mechanism but a relational medium whose being and assent form part of the message itself. In this sense, the divine communication that occurs in the Annunciation and the Nativity is shaped, personalized, and conditioned by Mary's very presence. Her femininity, her Jewish identity, her cultural milieu these are not disposable packaging but components of a divine semiotics.

Additionally, the title "Mother of the Church," solemnly declared by Pope Paul VI during the Second Vatican Council (1964), and later reaffirmed by Pope Francis in 2018 with the establishment of the Memorial of the Blessed Virgin Mary, Mother of the Church, underscores the Church's recognition that Mary's motherhood is not merely biological but ecclesiological. She continues to function as a medium of grace, intercession, and spiritual direction in the life of the Church. Thus, the Church's Marian devotion is not idolatrous nostalgia but a theological acknowledgment that God communicates, and continues to communicate, through human mediators sanctified by grace.

Indeed, the notion of Mary as both medium and message invites a deeper contemplation of how form shapes theology. Her perpetual virginity, her immaculate conception, and her assumption all doctrines with deep roots in Tradition, can be reinterpreted as signs pointing not only to her holiness but also to the nature of the message she bears: that God's communication is not abstract, but chaste, intimate, and eternal. Just as McLuhan emphasized the cultural and emotional effects of media forms, Marian dogmas reveal something of the affective, moral, and spiritual character of divine communication. The message of Christ is, in part, mediated by the mother who bore Him.

In an era increasingly skeptical of embodiment and increasingly obsessed with content delivery divorced from form (e.g., AI chatbots, disembodied avatars), Mary reminds us that God did not choose a Dropbox to deliver Jesus, but a woman. The Incarnation was mediated through flesh, family, and fidelity. Mary is not just the first tabernacle; she is the first theologian of the Incarnate Word. Her body, her voice, her presence, all carried more than a message: they revealed a method. And McLuhan would have us ask again: if God chose this medium, what does that tell us about the nature of the message?

The reduction of the Blessed Virgin Mary to a mere conduit in salvation history—a passive envelope who bore the Incarnate Word and was then set aside—remains one of the most theologically impoverished yet persistently circulated views in both popular and some academic circles. This functionalist interpretation trivializes Marian theology and undermines the significance of her identity, agency, and personhood in the divine economy. It fails to reckon with

the full theological weight of the Incarnation, which, according to Christian doctrine, is not simply about message delivery but about the form and flesh through which God chose to communicate Himself. The neglect of form, embodiment, and relational context in divine communication reflects a broader modern crisis: a desacramentalized view of communication itself. This is especially grave in the digital age, where the rise of content-centric, disembodied messaging threatens to erode the theological and anthropological foundations of Christian revelation.

Article Highlights

- Applies McLuhan's media theory to reinterpret Marian theology and divine communication.
- Demonstrates that Mary's personhood is integral to the message of the Incarnation.
- Connects sacramental theology with embodied communication through a qualitative hermeneutic approach.
- Challenges reductionist views of Mary as a passive vessel in salvation history.
- Offers a contemporary theological framework for understanding revelation in the digital age

Marshall McLuhan's communication theory, particularly his insight that "the medium is the message," offers a provocative lens through which to reexamine the role of Mary in the drama of salvation. However, despite McLuhan's own Catholic background and references to sacramentality, little has been done to synthesize his media insights with Marian theology in a sustained and rigorous way. This lacuna is especially problematic when considering that the Incarnation is the central communication event in Christian history—God's self-disclosure through flesh, through relationship, through a woman. If the medium through which a message is conveyed shapes or even constitutes the message itself, then a re-evaluation of Mary's role is not only justified but demanded. Without such a re-evaluation, contemporary theology risks perpetuating a message of God's revelation that is abstract, gnostic, and detached from history, gender, and the human body.

Review of the Literature

❖ Medium and Message: McLuhan's Communicative Turn

Marshall McLuhan's foundational idea that "the medium is the message" (McLuhan, 1964) signaled a dramatic shift in communication theory. He argued that the content of any message cannot be isolated from the medium through which it is transmitted. The medium alters, conditions, and even constitutes the content it bears. This premise has reverberated across disciplines—from sociology and technology to theology. McLuhan, a devout Catholic and daily communicant, understood media as extensions of the human body and spirit, placing his insights within a deeply sacramental and incarnational worldview (Gordon, 1997; Cavallin, 2021). Yet theological literature has been slow to engage McLuhan in a sustained dialogue, despite the resonance of his theories with biblical modes of communication and sacramental theology (Schultze, 2020). McLuhan's view offers a robust challenge to the Enlightenment-era abstraction of meaning from form, a bifurcation that also infects theology when Mary is treated as merely instrumental. In light of McLuhan, one must ask: If the Word became flesh, what does that say about the flesh as medium? And more particularly, about the woman whose flesh became the Word's entry point?

❖ Marian Theology and the Agency of Mary

Marian theology has long wrestled with tensions between exaltation and marginalization. From patristic titles such as Theotokos (God-bearer) to Vatican II's recognition of Mary as "Mother of the Church" (Lumen Gentium, 1964), the Church has affirmed her pivotal role. St. Irenaeus (c.180 AD) contrasts Eve's disobedience with Mary's obedience, casting her as a new archetype of relational fidelity in salvation (Against Heresies, III.22). Contemporary theologians like Levering (2022) and Ratzinger (2005) argue that Marian doctrines, such as the Immaculate Conception and the Assumption are not peripheral but essential to understanding the moral and ontological framework of the Incarnation.

Recent studies further emphasize Mary's personhood and agency. Staudt (2020) notes that Mary does not merely give birth to the Word but nurtures, teaches, and accompanies Him—a participatory mediation that is theological, not just biological. Long (2020) frames Mary as a theological subject who gives human consent, not mere biological cooperation. These insights challenge utilitarian readings and elevate her role to one of formational presence, aligning with McLuhan's insistence on the medium as determinant of meaning.

❖ Sacramentality, Embodiment, and Divine Communication

The Christian tradition is deeply sacramental, affirming that matter can mediate grace (Turner, 2021). The Incarnation itself is a paradigmatic act of embodied communication. Von Balthasar (1988) described it as "form becoming flesh", an aesthetic theology where beauty, truth, and flesh are indivisible. Ricoeur (1976) emphasised that symbols and signs carry surplus meaning precisely because of their form. The woman chosen to bear the Son of God is therefore not a detachable container but a theological form herself: maternal, feminine, Jewish, human. To divorce Mary from her form is to commit a theological abstraction inconsistent with the biblical pattern of mediation.

McLuhan's theory, thus, finds resonance in sacramental theology. The Eucharist is not "just bread," just as Mary is not "just a womb." Both are material and formal presences of divine mystery. The medium through which Christ enters the world is not value-neutral—it is expressive, participatory, formative.

❖ Toward a McLuhanian Marian Hermeneutic

A McLuhanian reading of Marian theology proposes that the mode of divine self-communication embodied in Mary is integral to the message of grace. This hermeneutic demand that Mary be studied not only through dogmatic affirmations but also through the lens of form theory and media aesthetics. Pelikan (1996) argued that how Mary is portrayed across Christian traditions shapes theological anthropology itself. Todorov (1982) stressed that forms are not inert they signal metaphysical and cultural realities. When God chose Mary, He chose a form that would shape the message: just as He did in choosing a cross, or a meal. Thus, integrating McLuhan with Mariology offers a timely and necessary theological corrective. It rescues both communication and theology from the reductionism of disembodied abstraction. It insists on the integrity of form. And it reclaims Mary, not as envelope, but as embodiment.

Theoretical Framework

The theoretical framework for this study is grounded in the intersection of two distinct but complementary fields: Marshall McLuhan's communication theory and classical Marian theology. McLuhan's theory of media, particularly his famous dictum "the medium is the message," forms the foundation for a re-examination of the role of the Blessed Virgin Mary in salvation history. McLuhan's framework, as expressed in his seminal work *Understanding Media: The Extensions of Man* (1964), emphasizes that the medium through which communication occurs shapes and transforms the message being communicated. This notion aligns with theological reflections on the Incarnation as the definitive "message" of God to humanity, a message that is not only communicated through words but also through the very form—the body—of Jesus Christ, which was mediated by Mary.

The study will explore the interplay between McLuhan's media theory and the theological concept of the Incarnation. The theoretical model applied here seeks to reframe Mary's role not just as the vessel for delivering the message, but as the medium that forms and shapes that message. Through this lens, Marian theology is not reduced to the passive, instrumental role often ascribed to it, but is instead understood as an active, integral part of divine revelation. In addition to McLuhan's theory, this study draws heavily from the sacramental theology of the Catholic Church, especially as outlined in documents like *Lumen Gentium* (1964), *Mysterium Fidei* (1965), and the writings of theologians such as von Balthasar (1988) and Ratzinger (2005). The notion that form is not incidental to revelation is a central theme in the Catholic understanding of the Incarnation. The body of Christ, mediated by the body of Mary, is an embodiment of divine grace. Therefore, just as McLuhan emphasizes that the form of media is inseparable from its content, Marian theology asserts that the form of divine communication—the body of Mary and the body of Christ—is essential to understanding the fullness of the Christian message. This dual theoretical lens enables a comprehensive framework that combines media theory with theological anthropology, focusing on how form, embodiment, and relational mediation are not peripheral but central to the Christian message.

Discussion and analysis

1. How does Marshall McLuhan's principle that "the medium is the message" reshape traditional theological assumptions about divine communication and mediation?

Marshall McLuhan's theory that "the medium is the message" (McLuhan, 1964) offers a radical rethinking of communication by asserting that the medium through which a message is conveyed is not merely a ditch but integral to how the message is understood. This concept invites an examination of divine communication in Christian theology, where the medium—often reduced to the background—takes on a crucial role in shaping the divine message. Traditionally, divine communication was framed as a form of transmission (e.g., via Scripture or verbal proclamation), with the emphasis on the content the message rather than the medium that conveys it.

However, applying McLuhan's principle allows us to consider the medium in divine communication as co-constitutive of the message. The Incarnation, for instance, represents a unique and radical instance where the medium (Jesus Christ's human body) and the message (salvation) are inseparable. The Word becoming flesh (John 1:14) implies that God's message is not merely an intellectual or doctrinal pronouncement but is mediated through the very form of the

incarnate Christ. McLuhan's theory pushes this further by suggesting that the body of Christ, and by extension, the human condition itself, is not merely the backdrop but the essential context through which salvation is realized. This suggests that the form of the message Jesus' embodied life is crucial to understanding divine revelation.

The theological implications of McLuhan's principle extend beyond the Incarnation to sacramental theology. The sacraments, for instance, are material forms through which divine grace is dispensed. The material elements water in Baptism, bread and wine in the Eucharist—are not simply symbolic but are essential to the communication of the grace of God. This echoes McLuhan's argument that "the medium" (in this case, the material elements) does more than convey information it constitutes and transforms the message itself.

Patristic writings, particularly those from Irenaeus of Lyons (*Against Heresies*, 180) and Cyril of Alexandria (*Letters and Commentaries*, 430), highlight the Incarnation as an embodiment of divine communication. Irenaeus argues that salvation was achieved through Christ's embodiment, noting that humanity, created in God's image, is restored through the physical reality of the Incarnation. Cyril of Alexandria further stresses that the person of Christ is the perfect union of divine and human, indicating that the medium (Christ's physical body) is the crucial vessel for God's redemptive message.

Moreover, modern scholars like Joseph Ratzinger (2005) emphasize that sacramental theology continues to affirm the inseparability of medium and message. For Ratzinger, the materiality of the sacraments becomes a necessary mode of encounter with the divine, underscoring the critical role that material forms play in shaping theological understanding. In this regard, McLuhan's theory offers a profound shift in recognizing that divine communication is not merely conveyed through abstract, doctrinal content but through the embodied, sacramental forms that God employs. Thus, McLuhan's theory has the potential to enrich theological discourse by emphasizing the ontological weight of the medium in divine communication and the inseparability of form and message in the Christian faith.

2. In what ways can the person and role of the Blessed Virgin Mary be seen not only as a medium but as a formative aspect of the message of salvation itself?

The person of the Blessed Virgin Mary has long been seen as the passive medium through which the Word became flesh. However, a McLuhanian-Marist synthesis reframes this understanding, presenting Mary not just as a passive vessel, but as a formative aspect of the message of salvation itself. This view challenges reductionist interpretations, asserting that Mary's role is not only in her physical consent to bear the Son of God but in the very ontological structure of divine salvation. Theotokos, or "God-bearer," as emphasized by early Church Fathers like Cyril of Alexandria (431) and Nestorius (431), affirms Mary's central role in the divine economy of salvation. Cyril and Irenaeus highlight how Mary's willing participation is not incidental but essential to the fulfillment of God's redemptive plan. Her fiat her "yes" to God creates the conditions for the Incarnation to occur, suggesting that Mary is not simply a passive channel, but an active participant in salvation history.

Theologically, the idea that Mary as the medium shapes the message of salvation aligns with McLuhan's assertion that the medium has an active role in shaping the message. Hans Urs von Balthasar (1988) reflects this idea in his work, noting that Mary's embodiment of Christ's birth is not merely the conduit through which Christ comes to humanity, but the very context in which salvation history unfolds. Mary's humanity, personified in her maternal role, becomes a critical

theological channel that forms part of the content of the message of salvation. This understanding, often underappreciated, repositions Mary as an essential co-worker in the divine drama of salvation.

Contemporary theologians such as Edward J. Kilmartin (1988) and Thomas Aquinas (*Summa Theologica*, 1274) expand upon this by emphasizing the sacramental nature of Mary's role in salvation. For Kilmartin, sacramentality is not simply about ritual acts but about embodiment, and Mary, as the sacrament of the Word's personification, is integral to God's plan for salvation. Aquinas, in his discussions of the Immaculate Conception and Assumption, recognizes that Mary's body and soul are not incidental to salvation but participate in the fullness of grace that Christ offers to humanity. Mary's yes and her bodily participation in the Incarnation, therefore, become formative to the message of salvation because they exemplify the mutuality of God's initiative and human response, reflecting the very nature of Christian revelation.

3. How can a McLuhanian-Marist synthesis offer a deeper understanding of sacramentality, embodiment, and form in the context of Christian revelation, particularly in contrast to modern disembodied communication paradigms?

A McLuhanian-Marist synthesis provides an enriched framework for understanding sacramentality, embodiment, and form in Christian revelation. In contrast to the increasingly disembodied communication of the modern world—driven by technology and digital media—this synthesis affirms the essential role of physical embodiment in divine communication. McLuhan himself observed that the rise of digital media leads to a disembodiment of communication, reducing the human encounter to mere data transmission (McLuhan, 1964). In contrast, the sacraments in Catholic theology offer a deeply embodied way in which grace is transmitted. Through the sacraments, material elements (such as water, bread, wine) are not just symbolic but real instruments of divine communication. The Incarnation serves as the definitive expression of this sacramental logic God entering human history through the body of Christ. In this sense, the physical body of Christ becomes the medium that brings the message of salvation into the world.

Theologians such as Louis Bouyer (1968) and Joseph Ratzinger (2005) have argued that the sacraments are not mere signs but channels of real grace. Bouyer emphasizes that the physicality of the sacraments is essential to understanding their transformative power, while Ratzinger highlights the integral role of material forms in the act of divine communication. These perspectives challenge the disembodied communication models that dominate modern media, underscoring the necessity of the physical form in encountering the divine.

The Marian dimension in sacramentality, where Mary's bodily participation in the Incarnation mirrors the Church's sacramental life, further deepens our understanding of embodiment in Christian revelation. Marian theology emphasizes that the materiality of Mary's body her yes, her flesh, and her womb becomes an essential aspect of how salvation is communicated. The body of Christ, born of Mary, becomes the medium through which humanity receives God's message of salvation. As McLuhan might suggest, the embodiment of the Word in the human body is not merely a transmission of information but a constitutive act of salvation.

Conclusion

The evidence is compelling, the verdict unambiguous: in the drama of divine communication, form is not ancillary to content, it is constitutive of meaning. Marshall McLuhan's media theory, when

brought into critical dialogue with Marian theology and sacramental embodiment, exposes the inadequacy of disembodied theologies that prioritize abstract propositions over incarnate realities. The Blessed Virgin Mary, far from being a neutral channel, emerges as a theological archetype of form, that maternal, human matrix through which the Word not only passes but is shaped. Her role as Theotokos is not a doctrinal accessory but a dogmatic imperative, one that demands a reassessment of how the Church understands revelation, incarnation, and sacramentality. Against the backdrop of a digitized and disincarnate age, the Church must recover a theology of presence, proximity, and flesh, where the medium is not merely the message, but the mystery. In this synthesis, Mary is not a marginal figure of piety but a paradigmatic witness to the truth that God does not merely speak to humanity, He is enfleshed in its very form.

Recommendations

Theological education and ecclesial formation should integrate insights from media theory—especially McLuhan’s “medium is the message”—to better interpret divine communication in its sacramental, liturgical, and incarnational forms. This paradigm reorientation enables theologians and catechists to move beyond content-driven frameworks to form-sensitive understandings of revelation.

Marian theology must be developed not as an ancillary doctrine, but as a central, form-defining aspect of salvation history. Mary should be engaged not only as a vessel but as the formative matrix of the Incarnational message, whose embodiment and consent shape the structure and message of Christian revelation.

In an age of technological abstraction, the Church must vigorously reclaim the embodied nature of divine mediation through sacraments, liturgy, and maternal images such as Mary—as a counter-witness to digital disembodiment. The embodied medium is not a concession to matter but an essential theological necessity.

References

Aquinas, T. (1274/1947). *Summa Theologica* (Fathers of the English Dominican Province, Trans.). Benziger Bros.

Balthasar, H. U. von. (1988). *Theo-drama: Theological dramatic theory, Vol. 1: Prolegomena*. Ignatius Press.

Balthasar, H. U. von. (1988). *The glory of the Lord: A theological aesthetics, Vol. 1: Seeing the form*. Ignatius Press.

Bouyer, L. (1968). *The spirit and forms of Protestantism*. Harper & Row.

Cavallin, J. (2021). *Marshall McLuhan and the sacred: The mediated message*. Fortress Academic.

Cyril of Alexandria. (431). *Letters and commentaries*. (Various modern editions and translations).

Gordon, W. T. (1997). *Marshall McLuhan: Escape into understanding – A biography*. Basic Books.

Irenaeus of Lyons. (c. 180). *Against heresies* (Book III, Ch. 22). In A. Roberts & J. Donaldson

(Eds.), *The Ante-Nicene Fathers* (Vol. 1). Christian Literature Publishing Co. (Reprinted 2007).

Kilmartin, E. J. (1988). *The Eucharist in the West: History and theology*. University of Notre Dame Press.

Levering, M. (2022). *Mary's bodily assumption*. The Catholic University of America Press.

Long, D. S. (2020). *The perfect rule of the Christian religion: A summary of Christian theology according to the Westminster Standards*. Cascade Books.

McLuhan, M. (1964). *Understanding media: The extensions of man*. McGraw-Hill.

Meynet, R. (2015). *Rhetorical analysis: An introduction to biblical rhetoric*. Sheffield Phoenix Press.

Pelikan, J. (1996). *Mary through the centuries: Her place in the history of culture*. Yale University Press.

Pope Francis. (2018). *Decree on the celebration of the Blessed Virgin Mary, Mother of the Church in the General Roman Calendar*. Vatican Publishing House.

Pope Paul VI. (1964). *Lumen Gentium [Dogmatic Constitution on the Church]*. Second Vatican Council. https://www.vatican.va/archive/hist_councils/ii_vatican_council/

Ratzinger, J. (2005). *Daughter Zion: Meditations on the Church’s Marian belief*. Ignatius Press.

Ratzinger, J. (2005). *The spirit of the liturgy*. Ignatius Press.

Ricoeur, P. (1976). *Interpretation theory: Discourse and the surplus of meaning*. TCU Press.

Schultze, Q. J. (2020). *Communicating for life: Christian stewardship in community and media*. Baker Academic.

Staudt, B. (2020). The priority of Christ in Marian theology. *Nova et Vetera*, 18(3), 875–898.

Todorov, T. (1982). *Theories of the symbol*. Cornell University Press.

Turner, D. (2021). *The body and the book: Revelation and mediation in Catholic thought*. Oxford University Press.

Wills, G. (2005). *What Paul meant*. Viking Press.

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