

Blessed Nicholas Steno: Natural History Research and Science of the Cross

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Abstract: *The following is an edited version of a lecture given in Copenhagen, in which Frank Sobiech presented some aspects of his thesis, "Heart, God, Cross: The Spirituality of the Anatomist, Geologist, and Bishop Dr. med. Nicholas Steno (1638–86)." It takes Steno's conversion as its starting-point. From there, it sketches the process which led Steno from Lutheranism to the Catholic Church. His spirituality is shaped both by his scientific experience as an anatomist and by his experience of the Cross.*

Key Words: Nicholas Steno; Niels Stensen; science – 17th century; science-theology relation; spirituality of the cross; Catholic-Lutheran ecumenism

Here, I will give some indication of my research, presented under the six headings. First, let us consider Bishop Steno's spiritual and theological significance.

1. Nicholas Steno: A Spiritual-Theological Project

The Danish anatomist, geologist, and bishop Nicholas Steno¹ (1638–86) was not only a great man of natural science, but also a master of spirituality.² On 23 October 1988, he was beatified by Pope John Paul II in Rome.³ The Redemptorist Fr. Gustav Scherz CSsR (1895–1971), the great Steno-researcher, honoured as the father of the Steno-Renaissance, laid the foundations for research into Steno's life and work by editing nearly all of Steno's treatises and letters. But the systematic comprehension of the vast material remained something for the future. Several scientists, especially those with a natural science background, had written about Steno's achievements. But no one has previously undertaken any serious research into his spirituality in reference to all edited and unedited primary source material.

Let me begin with a short biographical sketch of Steno's life. He was born in Copenhagen on January 11, 1638, the son of a Lutheran goldsmith. He studied medicine in the city of his birth from 1656 to 1659 and subsequently in Amsterdam (1660) and Leiden, Netherlands (1660–64). Steno won fame in the European scientific world as an anatomist and, later, as a geologist. During his study in Amsterdam and Leiden, for the first time in his life he was situated in a surroundings fragmented into the several Christian

¹ The correct form should be the genitive 'Stenonis,' but 'Steno' was always the common form in the English-speaking world.

² In this reworked lecture only facts that I have not mentioned in Frank Sobiech, *Herz, Gott, Kreuz: Die Spiritualität des Anatomen, Geologen und Bischofs Dr. med. Niels Stensen (1638–86)*, Westfalia Sacra, vol. 13 (Münster: Aschendorff, 2004); (also PhD dissertation, University of Münster, 2003), or that are very special are linked with footnotes; as regards the other material, see the respective passages in the above reference.

³ About the course of Steno's beatification process see Sobiech, *Herz, Gott, Kreuz*, 11–15.

denominations and sects. During this time, Steno went through a religious crisis and, for several years, adopted a kind of deistic position—as I will explain this later. He came through this crisis, helped especially by his faith in divine providence. After being received into the Catholic church while in Florence on November 2, 1667, he began to devote himself to pastoral and theological work.

After a couple of years serving as Royal Anatomist in Copenhagen (1672-74), he was ordained priest. Then, only two years later, he was ordained bishop in Rome. Steno was now bishop *in partibus infidelium*, with the titular see of Titiopolis in Asia Minor. From 1677 to 1680 he worked as vicar apostolic of the Northern Missions at the court of Hanover. In 1680 he became suffragan bishop of the diocese of Münster. From 1683 to 1685, he worked strenuously as ordinary missionary in Hamburg and, until his death on November 25, 1686, at the court in Schwerin. Steno was mourned by both Schwerin Catholics and Lutherans alike.

2. Steno Compared to Pascal and Descartes

November in the Northern hemisphere is a time when all in nature begins to turn grey, and as the days get shorter, one tends to become reflective. The deep questions of life and death surface, as the church celebrates All Saints' Day on November 1 and All Souls' Day on November 2. Such a time of reflection can lead to new decisions and insights. At least, these three men of science, René Descartes (1596–1650), Blaise Pascal (1623–62), and Nicholas Steno had crucial experiences in the month of November.

René Descartes, for example, had three strange dreams at the age of 23 years in the silence at a tiled stove, probably somewhere near Neuburg on the Danube, on the night from 10 to 11 November, 1619. He called them *Olympica*.⁴ On that night he became his normal self again. The meditative composure of this winter found expression in the second part of his later *Discours de la méthode* (1635–36). Descartes's so-called 'new' philosophy of that age became normative for many parts of European thinking in the following decades. Then, at the age of thirty-one, Blaise Pascal, a famous mathematician, influenced by the Cartesian method, and also acquainted with libertinism, had an inexpressible spiritual experience, lasting from half past ten to midnight, in his room on the Rue des Francs-Bourgeois-Saint-Michel in Paris during the night of 23 November, 1654.⁵ This experience is documented in his so-called *Mémorial*, which he carried around with him sewed into the lining of his garment. It was discovered by his servant only after his death. It begins "In the year of grace 1654...", and is followed by date and time of day. In this night Pascal overcame a period of mental emptiness and a long inner crisis caused by the worldly life of his former years. He felt overwhelmed by the presence of God, the God of Jesus Christ. He wrote of the joy, peace and certainty as the result of the extraordinary

⁴ On these 'Olympica' cf. as the introduction of Geneviève Rodis-Lewis, « René Descartes, » in Jean-Pierre Schobinger and Friedrich Ueberweg (eds.), *Die Philosophie des 17. Jahrhunderts: Frankreich und Niederlande*, Band 2, Grundriss der Geschichte der Philosophie (Basel: Schwabe, 1993), 287 -288. From the perspective of philosophy of science cf. extensively Claus Zittel, *Mirabilis Scientiae Fundamenta: Die Philosophie des jungen Descartes (1619–1628)*, in Jörg Jochen Berns and Wolfgang Neuber (eds.), *Seelenmaschinen: Gattungstraditionen, Funktionen und Leistungsgrenzen der Mnemotechniken vom späten Mittelalter bis zum Beginn der Moderne*, Frühneuzeit-Studien, N. F. 2 (Wien: Böhlau, 2000), 314–318.

⁵ Cf. Jean Mesnard, „Blaise Pascal,“ in Schobinger and Ueberweg (eds.), *Die Philosophie des 17. Jahrhunderts*, 2:542. Also mentioned in Karl-Heinz Menke, „Stellvertretung: Die Spiritualität des seligen Niels Stensen,“ *IKaZ* 18 (1989): 81. – One does not know how much Steno, who stayed in Paris from November 1664 to September 1665, learned about Pascal's life, cf. Gustav Scherz, *Niels Stensen: Eine Biographie, 1638–1677*, Band I, ed. Franz Peter Sonntag (Leipzig: St. Benno-Verlag, 1988), 137-138.

grace by God. His “grande conversion”⁶ led him to renounce scientific research, social relations to some extent, and even marriage.

For his part, Nicholas Steno was led to private theological study by his experience of a Corpus Christi procession in Livorno in 1666 and through the religious discussions he had during the summer of 1667. He was also impressed by saintly way of life of his friends of the Florentine *Accademia di Cimento*, as well as by the devotion of the Italian people. Still, he wanted to wait and examine Catholicism privately, without revealing his inner unrest. Nevertheless, he discussed his search for the religious truth with a nun of the order of St Clare, and with some clergymen and other laypersons. Among these was Lavinia Arnolfini (1631–1710), the wife of the ambassador of the republic of Lucca in Florence.

Steno was a regular visitor in the social circle that met at the Florentine palace of the Arnolfinis. On the afternoon of November 2, 1667, All Souls’ Day, probably after the midday meal, a turning point in Steno’s life took place. Signora Arnolfini asked him whether he wouldn’t like to become Catholic after all. Steno was firm in his denial. But the Signora pressed on, “Sir, the visits and conversations, having invited you by way of exception, had no other purpose than my care for your eternal salvation. So, if you don’t want to abandon yourself to the realization of the truth, don’t come to me again, if you are not prepared to become Catholic!” She also expressed her wish that Steno should go immediately to her father confessor, the rector of the Jesuit college of San Giovannino, Fr. Emilio Savignani SJ (1605–78), with whom Steno had already had several discussions. Steno left the house. Mrs Arnolfini was standing at the window, and noticed that Steno was going the wrong way. She shouted to him: “Don’t go where you want to go, sir, go the other way!” To Steno, reflecting deeply on religion at the time, this shout appeared as the voice of God calling on him to leave the wrong path and to follow the way of salvation. He felt the touch of divine providence, and so set off to the Jesuit college. In the meantime, Fr. Savignani, who had been on his way to the palace of the Arnolfinis, was immediately sent back on his arrival by Signora Arnolfini in order to catch Steno. They finally met up, and both went to the college where Fr. Savignani left Steno in the parlour in order to fetch the apologetics books from the college library so that they could begin their usual discussion about the Catholic faith. During the Jesuit’s absence, Steno, however, felt a change within himself, and declared when Fr. Savignani came back that no more discussions were necessary. The truth had been revealed to him deep within in the radiance of God’s light.

This sequence of events proved to be formative for the remainder of Steno’s life. At the age of twenty-nine, he came to recognize that on that afternoon God had taken him by the hand. He was compelled to confess with the psalmist: “Thou hast loosed my bonds, Lord” (Ps 115:16). The “bonds,” Steno reflected in a later letter to his Protestant friends in Amsterdam (1672-77), consisted in his being too much taken up by his natural research, and in the fact that he had become so “material”-minded as to be oblivious to the voice of God. He was convinced that God’s grace had inspired his conversion, and he was grateful for the rest of his life for what had been granted to him – an “unworthy sinner,” as he termed himself.

Like Pascal, Steno was convinced that he had received an extraordinary grace. The “certainty” he felt, similar to that of Pascal felt, was characteristic of Steno’s religious experience. Like Pascal, he too had been formed in the Cartesian method from his youth.

⁶ Pascal’s ‘second’ conversion can also be named ‘second conversion’ on another level, namely from a spiritual-theological point of view, that means after baptism as renunciation of the evil. Pascal’s ‘first’ conversion, ‘la petite conversion’ – also a ‘second conversion’ in the other, spiritual-theological sense –, which he performed with the rest of his family, dates from 1646. In 1658 Pascal felt a desire for conversion anew because he had been too much engaged in mathematical research again, cf. Mesnard, “Blaise Pascal,” 543-547.

Likewise, after his conversion committed himself to celibacy. But in contrast to Pascal, he continued his scientific research after this decisive experience.

In summary, there were three important dates in Novembers of the 17th Century, one at the beginning, one in the middle, and one in the second half. There was Descartes in the silence around the famous tiled stove near Neuburg on the Danube, Pascal in his room in Paris, and Nicholas Steno outside the palace of the Arnolfinis and in the parlour at the Jesuit college in Florence. These three dates were of decisive significance, not only for three men, but also for science itself.

Steno's Conversion: A Scientist on his Way to God

But what did Steno believe during the years up to his conversion? During his study in the Netherlands (1660–64), he made acquaintance with Cartesian, deistic, and atheistic thinking, all of which shook his Lutheran faith and consequently led him to a religious crisis. Influenced especially by deism, he believed that it would be possible to grasp all mysteries of faith with the help of the natural reason alone. During a dissection performed as bishop in Celle on 7 May, 1680 he even confessed that he had been nearly seduced by atheism, by doubting a personal God and accepting an impersonal fate. After his discovery that the heart was a muscle in 1662/63, his observations of the structure of the heart and the other inner organs of the human body led him to conclude that such a wonderfully elaborate “work of art” could not be accidental or determined by blind fate. A personal, wise God was involved. This realisation led him back to faith in a personal Creator. Afterwards, as he told the Hanover Court counsellor and librarian Gottfried Wilhelm Leibniz (1646–1716), he gave time to the study of religions. He began to see that either every religion is equally good, or that only the Catholic religion was true. In other words, either religion was invented by human beings in order to honour their Creator, or that religion is prescribed by God so that only a single one can be true. The first alternative favours the deistic position, and belongs to those who have a purely “political” approach to the religion that most helps them get ahead. Steno had followed a kind of flexible deistic position in the years leading up to his conversion on November 2, 1667. His previous attitude, however, had not allowed him to reject belief in a personal God. He was not so much convinced of the relativity of religious truth, but entertained serious doubts concerning the uniqueness of Christian faith. In all this, there was no question of him falling into an atheistic mentality. He found it possible to pray to the God common to all Christian confessions. Yet he had reservations because of his sense of the alternatives confronting him, and because he was totally involved in his scientific investigations and had no time for deeper theological studies. Moreover, since his discovery that the heart was a muscle ran counter to the current Cartesian teaching, Steno lost respect for human authority, and his faith in the providence of a personal God was renewed. He expressed this in the short prayers he composed such as:

Without the will of whom neither a hair falls from one's head, nor a leaf from a tree, nor a bird from the air; nor does one's mind accomplishes a thought, nor one's tongue a word, nor one's hand an action. You have led me on unknown ways up to now; lead me further on the path of grace, either seeing or blind! For you it is easier to lead me where you will than it is for me to renounce where my wishes are drawing me to.

On returning to Copenhagen in mid-March 1664, after his studies in the Netherlands, Steno was passed over in the professorial appointments at Copenhagen University. Even though his publications were well-known, court politics decided the outcome. As he wrote in 1680, he desired to entrust himself totally to divine providence

during this time. He wrote later of many instances, similar to this experience of being passed over, in which unforeseen obstacles had upset his carefully laid plans. Yet at other times, surprising and unforeseen things suddenly happened that served to reinforce his belief in divine providence at work. His trust in God in this way finally overcame his residual deism.

Steno's faith in the providence of God was neither a deistic attitude nor tied the Lutheranism of his student years. It arose with unprecedented strength following on a period of inner unrest, and led to his conversion to the Catholic faith in the November of 1667. Despite his previous deistic stance, Steno's Lutheran upbringing had still exercised some influence over him until his conversion. As he wrote in his theological letter to his Amsterdam friends (1672), it was not as though he had regained his old Lutheran convictions. He had simply no time for deeper investigation into religion. But a larger horizon was opening up.

Two phases of Steno's conversion can be distinguished. First, there was the period from 1660 on, from the time he began his studies abroad until he made his far-reaching discoveries concerning the muscular nature of the heart in 1662/63. Secondly, there was the period leading to his conversion on November 2, 1667. This included his Copenhagen stay lasting several months after his return from the Netherlands in 1664. In this time, Steno totally gave himself to divine providence. In the first phase, his faith in a personal, caring God revived; in the second phase a deeper confidence in the providence of God developed, and this proved to radically affect his life thereafter.

4. Steno's Spirituality

In the Danish magazine *Catholica* of 1948, the Copenhagen-based Jesuit Fr. Heinrich Roos SJ (1904–77) wrote a review of the second volume of Steno's theological writings which had been published in 2nd edition in 1947. Most of the 1st edition had been destroyed by a bombing raid in 1943. Fr. Roos, in all probability, had only skimmed through the text, and unfortunately took Steno's excerpt of the pseudo-Taulerian Book of Mental Poverty as Steno's own composition. Consequently, he judged Steno's writings rather harshly, and deemed them dry and abstract, speaking more to the brain than to the whole human being.⁷ I should add that Roos didn't want to do wrong by Steno, for he later contributed to the journal *Stenoniana Catholica* which had been founded to promote Steno's beatification process. Indeed, we find in Roman *Positio super virtutibus* published in 1975, which formed the historical-critical basis of the process, that Steno's theological writings showed a 'taste of freshness and actuality,' due to their many quotations of the bible and the Fathers of the Church.⁸ What, then, is the more accurate judgement? If you compare these two differing appreciations of Steno's spirituality, it is not clear how it would be regarded in the history of Christian spirituality. In fact, neither Fr. Scherz nor other writers had seriously worked with Steno's genuinely spiritual writings. Nor had they considered Steno's other writings from a spiritual point of view.

In order to find an answer, one must look more deeply than Fr. Roos's assessment. Especially in the letters of Steno's last years, one can find formulations differing between three different 'steps' of divine activity within the process of salvation. They are

⁷ Review of Knud Larsen, Gustav Scherz (eds.), *Nicolai Stenonis Opera Theologica. Cum Prooemiis ac notis Germanice scriptis*, *Catholica* (Copenhagen) 5 (1948): 155.

⁸ Sacra Congregatio pro Causis Sanctorum, *Osnabrugem. Beatificationis et Canonizationis Servi Dei Nicolai Stenonis Episcopi Titiopolitani († 1686). Positio super introductione causae et super virtutibus ex officio concinnata* (Rome: Officium Historicum, 1974), xxi.

'appropriated' to the three persons of the Holy Trinity. This formulation, originally developed by Steno, can be considered to be the main structure of his spirituality. In the systematic part of my doctoral research, entitled *Heart, God, Cross*, I followed this formula in presenting the whole range of Steno's spirituality. Its basic form can be expressed as follows: God the Father has prepared it that way since eternity; God the Son has merited it on the Cross; and God the Holy Spirit will bring about it in us - if we do not resist grace. What I mean by "It" is the divine gifts forming the life of each individual. There is the possibility of resistance to the action of the Spirit, since our human co-operation is required if grace is to have its effect.

Steno had found in his experience of conversion what divine grace means. This was the starting-point for the formation of his own spirituality. It sets great store on the importance of divine grace for the daily life of every Christian. Often Steno speaks of the 'time(s) of grace.' He highly regarded what happens at crucial points of one's life; these prove decisive, and must not be missed. He forever feared missing the 'hour' of divine grace due to his own resistance and negligence. His approach to divine love and grace has its roots in Ignatian spirituality. In this regard, Steno considers all his actions from a salvation-historical point of view, exposing his firm faith in providence to the flow of divine grace. Its source is the eternal will of God as it culminates in the Incarnation and continues to work. His faith in divine providence had, therefore, an intensely dynamic character.

Steno never intended to work out a complex system of spirituality, nor to write a monograph about ascetical spirituality. Nevertheless his spirituality, which is informed by his trinitarian formula of salvation, comes from his experience of conversion, is a matter of "the heart, God, and the Cross." After his scientific discoveries of the years 1662/63, Steno was able to relate to a personal Creator again. After his conversion, he totally gave himself to the following of Christ, and to the "Science of the Cross."⁹ He appeals to the whole human person as a physical-mental composite being drawn to God. He had received a Jesuit influence through the Ignatian exercises and by direction of his confessors. Still, Nicholas Steno's theology cannot be ascribed to one particular spiritual school.

5. An Embodied Spirituality

In his pastoral care, Steno expected from others the high standards he demanded of himself. He wrote on March 16, 1679 to the Florentine grand duke Cosimo III of Medici (1642–1723) that the frozen souls of his parishioners in Hanover could be compared to the severe winter of the early months of that year, and that there was no way to clear the way for the 'warmth of divine love' (*calore del divino amore*).¹⁰ He had in mind what I call the 'circulation of divine love.' He described the human body with its different parts as an interpreter whose task, with the aid of divine grace, was to transform the love received from God into its own human language so that the human being would be ready to respond to God in love. Relationship to God was a circulation of divine love. Steno's

⁹ This term stems from the title of the last work of St Edith Stein (1891–1942; beatified 1 May, 1987, canonized 11 October, 1998), 'Kreuzeswissenschaft. Studie über Joannes a Cruce.'

¹⁰ Gustav Scherz (ed.), *Nicolai Stenonis Opera Theologica. Cum Prooemiis ac notis Germanice scriptis. Tomus prior* [I], (Copenhagen: Nyt nordisk forlag, A. Busck, 1952), E 170, p. 405, l. 13–15. Cf. the data concerning the weather of the year 1679 in *Ibid.*, E 172, p. 407, n.2. Also on 5 December, 1685, towards the end of his Hamburg stay, Stensen wrote to Cosimo that the human heart seemed to follow the climate, and in Hamburg all hearts were frozen, in Gustav Scherz (ed.), *Nicolai Stenonis Opera Theologica: Cum Prooemiis ac notis Germanice scriptis. Tomus posterior*, (Copenhagen: Nyt nordisk forlag, A. Busck, 1952), E 436, p. 830, l. 9 f.

intense occupation with the human body thoroughly shaped his spirituality: the body was to be perfected in order to be more fully dedicated to the service of God.

A shift in emphasis of his judgement of the empirical world took place in his last years. Under pressure of external circumstances, he mentions in his lecture referring to the pseudo-Taulerian 'Book of Mental Poverty,' the path that led him directly to God, instead of going by the 'roundabout way' of nature. Steno's letters and private spiritual writings give evidence of this shift. Yet his original spirituality of creation remains. Even as bishop in Hamburg (1684), he carried out dissections of the heart and undertook new studies on the nerves.

Steno emphasizes the 'pro-existence' of Christ. Jesus had sacrificed his life for our salvation. This was the guiding principle for the actions of every Christian who patiently accepts the sufferings from the hand of God in order to offer them up for the benefit of his neighbour and one's own good. The foundation of Steno's spirituality of suffering is "physico-theology." In this he seeks to relate the God of nature to the theology of the Cross. The heart and the cross appear on his coat of arms. The human heart as a part of Creation is correlated to the Cross of the Christ. Steno's two manuscripts dealing exclusively with physico-theology were written in his last years in order to convince atheists and 'political ones' of the existence of a personal, loving Creator. Unfortunately, they are lost, so that one cannot reconstruct his original point of view in any detail. But on the basis of his spirituality of Passion and human suffering—with its dual themes of both Creation and sin—we can say with certainty that Steno avoids the serious mistake made by many physico-theologians from the Catholic as well as from the Protestant side. Their intuitions on the beauty of nature did not have within their horizons the fact of evil and sin, and the experience of Creation as fallen. The beauty of Creation forces sin into the background. Unfortunately Steno's early death prevented the fruition of his life work of mediation between natural science and theological-spiritual contemplation of the order of Creation including the Cross as the Enlightenment dawned in the second half of the 17th century.

6. Steno's Ecumenical Importance

It is notable that a remarkable scientific investigation into the muscular structure of the human heart drove this man to leave his former scientific profession and to embrace the Catholic faith. On 7 October, 1959, some days before the presentation of Steno's writings to the Roman Congregation of Rites,¹¹ Giuliano Agresti (1921–90), Florentine priest, professor of dogmatics and later archbishop of Spoleto and Lucca, wrote an article with the title "Nicholas Steno, Man of the Crucified Love." It was published in the Vatican daily newspaper 'L'Osservatore Romano,' and described Steno's life as an outflow of divine love. Fr. Scherz read this article and translated most of it for the *Stenoniana Catholica*. Agresti, who wanted to explain why Steno had become a natural scientist first, wrote: "Under the influence of the dark and eerie mists of Protestantism, his [Steno's] heart found it difficult perhaps to explore the light of God, and then found a refuge in nature, in the »heart-warming things" of God.¹² But Fr. Scherz, with ecumenical sensitivity, toned down the sharpness of Agresti's sentence.

¹¹ In the evening of 7 October, 1959 a Steno celebration took place in the 'Sala dei Dugento,' cf. Gustav Scherz, "Altar, Audienz und Konzil: Eine Pilgerfahrt nach S. Lorenzo," *Stenoniana Catholica* 5 (1959): 75–77.

¹² Giuliano Agresti, "Niccolò Stenone uomo della carità crocifissa," *L'Osservatore Romano* (7 October 1959): 2. Even Steno, who was always glad to have become a Catholic, spoke of the 'tenebre' of Protestantism, but not contemptuously, but moved by compassion, cf. Scherz, *Nicolai Stenonis Epistolae I*, E 83, p. 271, l. 19.

It must be remembered that Nicholas Steno was a convert who regarded it as his life's task to promote further conversions to the Catholic church by means of prayer, sacrifice, and persuasion. Yet he was always opposed to forced conversions as practised in the France of Louis XIV (1638–1715). Furthermore he was convinced of the validity of his Lutheran baptism. He was not a theologian of the polemical type, but treated the Protestants, his 'brothers,' with love both theoretically and practically. He emphasized that only deliberate obstruction of God's grace and ignoring God's call to conversion to the Church as the will of God puts one in a sinful state. Having a mistaken belief is another matter. He believed that a Protestant can be a Catholic at heart, by reading the bible and following the inspirations of the Holy Spirit at work in all. Nicholas Steno felt sent to all Christians. On his Schwerin death-bed he blessed also the Lutherans who were mourning his passing. Concerning ecclesiastic unity, he was convinced that it cannot be reached by politics or even so-called church politics, but only by the grace of God sought in prayer.

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