

KURIAKOSE ELIAS CHAVARA

Transformation through Science and Technology

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Abstract: The author is taking a look at the contributions of St Chavara to the Church in the light of the modern technological and scientific discoveries and inventions. As a man of methodology and systematization, Chavara led the way to knowledge production in the part of the world he lived in. Relentless in his search for the dissemination of knowledge, he left no stone unturned in exploring the power of technology. At a time and in a place where education was scarce, he considered the transmission of knowledge as his mission and geared individuals and institutions within his power to engage in the mission.

Keywords: science, culture, methodology, systematization, Galileo, Aristotle, mathematics, knowledge, worship, education, technology, charism, institutions.

1. Introduction

Science and technology as we experience today with its strident march towards the transformation of life and its environment evolved during the sixteenth century through the revolutionary contributions of Copernicus, Galileo, Kepler, Newton and others.¹ They replaced the Aristotelian-Thomistic philosophical cosmology - Cosmosophy - with Heliocentrism and developed laws through the employment of experiments and mathematical categories that defined mass, force, velocity etc. This pursuit of understanding and engineering nature was possible because of introducing a methodology for scientific research. It was Galileo who gave an impetus to develop a methodology for science and technology. One can see a clear parallel between the life of Galileo and the life of Saint Chavara who worked hard to develop, systematize and create a methodological awareness in the Kerala culture. This awareness has been transmitted through the

¹M. Chandrankunnel, *Cosmosophy*, Bangalore: Dharmaram Publications, 2014.

congregations, namely, the Carmelites of Mary Immaculate (CMI) and the Congregation of Mount Carmel (CMC), which the Saint established to continue his charism and impetus. Chavara was aware of the power of science and technology and creatively employed them for the transformation of the society. He fired the imagination of the people of Kerala and the culture of the land gradually catapulted the society towards a total transformation in myriad ways.

2. Man of Methodology and Systematization

Lack of organized thought and activity was one of the weaknesses that Chavara encountered in the Kerala culture. One can observe the implementation of the disciplined, organized, thought processes and activities not only in his own life but also the in the implementation of it in the activities of the society. This imposition of systematization is the hallmark of Chavara. This characteristic trade mark was impressed up on all his activities.

In the 17th century, Galileo conducted experiments in order to test the Aristotelian physics.² One of the famous experiments which he is said to have conducted at the leaning tower of Pisa was dropping a light body and a heavy body of the same size from the top of the tower. Galileo found that both the light body and the heavy body touched the ground simultaneously disproving the Aristotelian notion of motion namely, the heavy body touching the ground first, and then the light one. In addition to this, on inclined planes, Galileo conducted experiments to understand the motion of bodies on the horizontal plane. According to Newton, it was Galileo who conceptually developed the first two laws of motion which were later quantified by Newton through the employment of calculus in quantifying motion. Through the telescope, Galileo meticulously observed the lunar surface and discovered mountains and valleys and painted them accurately. Galileo was the one who proposed that mathematics is the key to unlock the mysteries of the universe. He developed the experiment based acquisition of knowledge that has been conveyed through mathematics. In the 19th century, it was Chavara who evolved this process of disciplined and methodological acquisition of knowledge in Kerala and its meticulous transmission through well-equipped institutions and left of the posterity.

²M. Chandrankunnel, *Ascent to Truth: The Physics, Philosophy and Religion of Galileo*, Thiruvananthapuram: International Chavara Cancer Institute, 2011.

3. Innovator in Knowledge Production

The process of disciplined and methodological acquisition of knowledge was initially set in motion in his own religious community. The *gurukula* system of priestly training was revamped and Saint Chavara imposed a curriculum with regular hours of teaching, spiritual practices and other activities. Sufficient supply of books for the students was indeed a need of the time and he was instrumental in translating books from Tamil, Latin and Syriac languages. In order to make the recital of the Divine Office by the priests regular, Chavara organized the *Tukkasa* and the rubrics for the liturgical practices between 1862 and 1869. He systematized the spiritual renewal of the people also. Sunday homilies, retreat preaching, 13 and 40 hours of Eucharistic adoration, Way of the Cross, and Veneration of the Saints in the months dedicated to them were some of the practices that he introduced to the Church in Kerala. These in turn enhanced the spiritual renewal.

In the 19th century cultural milieu of Kerala, knowledge was coded and was confined to particular communities like the Brahmins. *Gurukula* system prevailed in those times and sustained the confinement of knowledge. Chavara revolutionized the educational system by establishing a Sanskrit school in 1846 where students from all classes of the society were welcome. It was the first such school in Kerala where everyone, irrespective of religion and cast could sit together and learn. Chavara invited a teacher (a Hindu who belonged to the Varrier sub-caste) from Trichur to teach the students. Chavara was progressive enough to appoint someone from a religious tradition that was not his own as the head teacher, and daring enough to bring him from a place far away. This is an example of his revolutionary insights in the systematization and organization of knowledge production. Since many of the students who attended the school were poor, he introduced the free midday meal scheme as part of the education system so that the students could learn without worries.

When Chavara was appointed as the Vicar General of the Archdiocese of Verapoly, he was instrumental in establishing a school each in every parish which later catapulted Kerala to be the first complete literary state in India. Establishing the first Sanskrit school and instructing every parish to have its own school, he became instrumental to the production of knowledge and its spread. In this way, the educational level and the rational thought process of the people could be elevated. Knowledge for him was indeed

characteristic of human beings and he found that it was a powerful tool for inner transformation.

4. Initiator of the Power of Technology

Chavara was aware of the power of technology. As he introduced ways and means of knowledge production in different fields, he was also aware of the need of the transmission of the knowledge. In the West, printing was introduced in the 15th century. The missionaries who came to India brought the printing technology and employed it suitably for their purpose. The CMS press was established by Benjamin Bailey, an Anglican missionary in Kottayam, Kerala, in 1821. Having known the power of the press in the transmission of knowledge, Chavara wanted to establish a press in order to widen the distribution of available books to upgrade the rational and spiritual thinking of his community. The legendary efforts he made in order to achieve this goal were recently elaborated in several articles on the occasion of the canonization of saint Chavara.³ His long journey to Thiruvananthapuram by a country boat to visit the Government press since the CMS would not allow him to visit their press in nearby Kottayam and how he saw it and created a model of the press, which in turn was realized by a carpenter on wood are indeed memorable.

The resource crunch in those days was such that for the printing works, he had placed an order for half a barrel of ink from Mumbai. However, the merchants sent him a full barrel. The way he managed to collect money for the surplus ink, is an example for the resolute determination of Chavara in deploying the technology. Eventually, he obtained the printing types with the help of a skilled employee whom he had taken to a faraway place to learn the art and process of developing the moulds. There were police notifications issued with a demand to reinstate this skilled labourer to his original employer. It is incredible to read how courageously Chavara confronted all these snags in order to achieve the goal of establishing the printing press in Mannanam, which he achieved on 3 July 1846. The feat was almost similar to launching a rocket to the outer space in these days. Chavara's resoluteness and determination won the day. This venture exhibits the revolutionary farsighted vision of the saint in employing the power of technology in the transformation of the society.

³P. K. Rajasekharan, "Chavarayachante Vazhathada Viplavam," *Footprints of Holiness*, 160-162.

5. The Mission of Transmission of Knowledge

The knowledge production and the transmission of it through different channels became a major charism of the Congregations that Chavara founded. The first Malayalam daily newspaper - *Nazrani Deepika* - came out on 15 April 1887, from the press that he had established. It enabled thousands of people to read and to keep in touch with the world at large. It was initiated by the CMI congregation, inspired by the powerful vision of the saint. In the mission territories of India, the community established printing presses and launched journals in order to support the transmission of knowledge. In the 20th century, this charism was taken even to the African missions. In Ghana, where T. A. Antony CMI was working as a missionary, in order to dispel the darkness of illiteracy, he established a printing press.

Transmission of knowledge is indeed the predominant charism that Chavara bequeathed to the Congregations that he has established. This is evident from the numerous educational institutions the CMI and CMC congregations have established throughout India and abroad. The CMI Congregation at present has one Pontifical Athenaeum, a Secular Deemed University, 1 Medical College, 4 Autonomous Colleges, 24 Colleges, 3 Engineering Colleges, 6 Nursing Colleges, 2 Sports Colleges, 9 BEd Colleges and three Research Centres while the CMC Congregation has 4 Colleges, 5 Training Colleges, 7 Parallel Colleges, 1 Nursing College and many schools and other training institutes.

6. Individuals and Institutions

Having been inspired by Chavara, a number of Institutions and individuals have continued the noble charism in the field of transmission of knowledge. They have employed science and technology in their respective fields. As a researcher, Gabriel CMI discovered a sea insect that drills the outer iron wrap of ships, which has been named as *Bronchia Gabrieli*. He is instrumental in establishing the Amala Cancer Hospital, Trichur, a pioneering research centre for the cure of cancer. In addition to the Allopathic medicine, in depth research in alternative medicines such as Ayurveda is conducted there. Isaac Chakalaparampil CMI had established himself as an internationally known researcher in *Oncogenes*. The results of his research were also referred by Nobel Prize winners in medicine like J. Michael Bishop (Nobel Prize for retroviral oncogenes in 1989) who

quoted his researches in his articles that showed the extraordinary merit of Chakalaparampil. He began his academic career as a lecturer at Christ College, Bangalore, did his doctorate from the Indian Institute of Sciences, Bangalore, and later worked at the McGill University, Canada.

The Renewable Energy Centre, Mithradham, Aluva, Kerala is another offshoot of the scientific research and technological approach inspired by Chavara. George Pittappillil CMI is the visionary founder of this creative venture where new models of renewable energy sources are tested and popularized. The centre has won several national and international awards and places itself in the forefront of the environmental protection and the search for renewable energy rather than the fossil based energy sources that pollute the earth heavily.

7. Conclusion

The spirit of science and the awareness of the power of technology are transmitted to a generation of CMIs by means of courses like the philosophy of science courses at various centres of ecclesiastical studies. The students who pass out from these institutions make a large impact in the society as many of them would be involved in the management of knowledge. In schools, colleges, universities and Technical Institutes that are run by the CMI community, the spirit of innovation and transformation of the society through science and technology is visible. To bring about a blending of the environmental concerns and the caring of nature, the CMIs and the CMCs are in the forefront. The inspiration of Chavara is spurring them in their efforts to transform the society. However, they have a long way to go in order to keep up the tradition and spirit of the saintly founder and the Institutions are to be geared up to reach the heights of expectation of the visionary founder.