

A szív helye a mecsetben és a gótikus katedrálisban

The heart in the mosque and the gothic cathedral

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Abstract:

The heart fascinated humans since time immemorial as source and repository of our feelings, desires and demons. It also observed inner sensations, governed the psyche, vitalized the body, and presided over the parliament of organs. Modern scientific thinking reduced it to a mere pump. Rational intellectualism developed and spiritual insight declined. The mosque and the gothic cathedral relate to deeper symbolism; both apply a ritual of the heart. In the mosque, a niche with scallop-shaped canopy (mihrab) connects to man's heart of increasing levels of conscience. Prayer awakening the innermost pearl enables the heart to directly perceive God's word and light. Symbolism of the gothic cathedral presents physical and metaphysical worlds in unity. Its structure can be observed as different levels of conscience in which the nave is identified with the physical world, the choir with the soul and the sanctuary with the spiritual sphere. This classification is rooted in a tripartite system of the human being by Aristotle and Galen. According to Galen, the soul is governed by the heart that also affects neighbouring domains of the body and mind as much as the choir links the nave with sanctuary. This is the cathedral of the heart.

Keywords: History of Medicine, Medieval Medicine, Philosophy, Gothic, Symbolism,

Kulcsszavak: orvostörténet, középkori medicina, filozófia, gótika, szimbolizmus

Introduction

Science from the time of *Descartes* seems to have settled the age-old debate whether the heart or the brain was the seat of the human soul. Brain won and the heart was reduced to a mere pump. Modern research in neuroanatomy and physiology, however, argues that there can be no separation between mind and body. The mind is now in search for its soul [Abraham, 1999]. As for the heart, recent discoveries of neural crest derived stem-cells and intrinsic catecholaminergic cells in the heart prove that it functions like an internal sensory organ that also connects directly to the brain [Tamura, 2009; Rysevaite, 2011]. Traditionally, these two aspects: acting as an internal eye to the self and connecting to different levels of consciousness have been associated with the heart. So, the heart appears to recover some of its former mystique. The aim of this study is to present two examples, the mosque and the gothic cathedral, where the heart acts as an internal eye and communicator.

The heart in the mosque

Basic floorplan of the mosque is allegedly derived from the house of the Prophet *Muhammad* in Medina [Frishman and Khan, 1994]. Traditional direction of the prayer towards Makkah is signified by the *qibla*-wall (for *direction* in Arabic). *Mihrab* and *minbar* are the only but constant features of the qibla-wall. The latter is a staircase for religious recitations and sermons that erects vertically and protrudes towards the believers. The mihrab is a niche at the midpoint of the wall. (**Fig. 1**) It is halfway outside of the space of the mosque symbolizing its character of connecting dimensions at present with remote ones. Optically, a minbar is a triangular, positive form, while mihrab is semi-circular or oval and is basically a negative spaceform. When conjoined by placing them next to each other, they characterize masculine and feminine characters. The mihrab typically carries a scallop shape at its canopy. This is similar to semi-circular vaults in other religious buildings for placing statues of venerated persona in it. In this context, the niche denotes the figure's connection with other, e.g. unworldly dimensions; the shell acts as a halo around the statue's head. Of course, figurative representation is much restricted in Islamic art and installation of a figurative sculpture into the mihrab would be regarded as idolatry. Still, as the shell that adorns the canopy of the mihrab remains a regular feature, first, this form demands further elucidation.

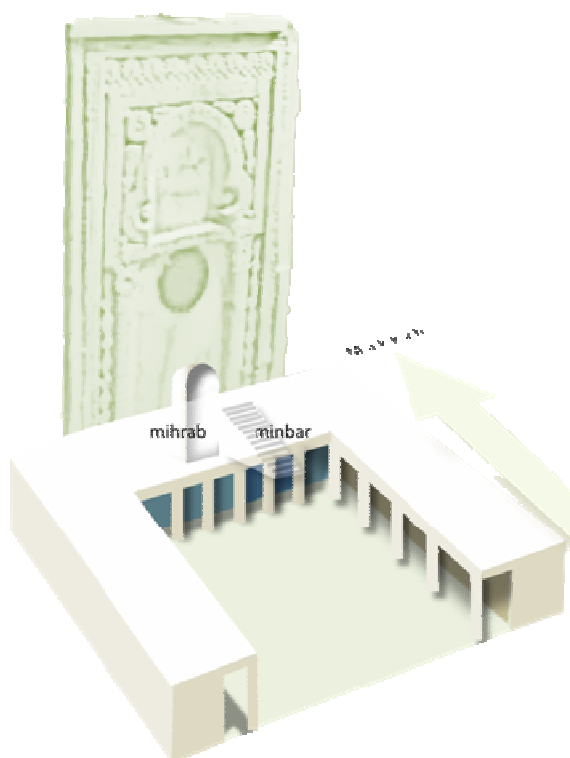


Figure 1: Basic floorplan of the mosque

Tradition has it that the basic floorplan of a mosque is derived from the house of the Prophet Muhammad in Medina. This had a central colonnaded courtyard. Direction of the prayer was originally Jerusalem, subsequently changed towards Makkah. The wall facing Makkah, called qibla-wall features the mihrab: a niche and minbar a staired pedestal. *Insert* shows the white marble mihrab of the subterranean chamber at the Dome of the Rock in Jerusalem. Its age (whether it is dated from the 7th or 10th century CE) is debated; its striking feature is the oculus-like black disc in the centre and its flat, i.e. non-concave appearance [Baer, 1989]

In order to explore the shell's function in the mosque, it needs to be noted that in the Graeco-Roman world of symbols, a clamshell is a symbol of untouched nature, virginity and fertility [Ronnberg, 2010]. By the first appearance, it alludes to female genitalia (vulva) commemorated by numerous artists all over the centuries. **(Fig. 2)** It is closed and self-contained that connects to an inner- or underworld of unconscious. Timeless existence, and/or unconscious mind are inherently related to water, as well. The shell's hard casing (*exoskeleton*) protects and nurtures the pearl inside as a virgin, primordial and feminine entity.



Figure 2:

Georgia O'Keeffe: Slightly open clamshell

1926. Pastel on white ground on paperboard, 18 ½ x 13 in. Wadsworth Athenaeum Museum of Art, Hartford, USA [O'Keeffe, 1926]

Thus, it is the birth into physical existence that *Aphrodite* steps out of an open scallop at the shores of Cyprus. Another type of birth – beginning of a new self-conscience and existence – is recognized in Christian baptism. It employs both characteristics related to the shell: water and clamshell as baptising basin. The shell is the emblem of *St. James the Elder*, patron saint of Spain, venerated in Santiago de Compostela. Pilgrims of El Camino traditionally wear and use this symbol with a multi-layered meaning. Local myth has it that St. James' lost coffin was washed ashore covered by shells protecting it. Pilgrims make practical use of the scallop for gathering water, alms as a makeshift bowl. Metaphorically, converging grooves meeting

into a single point represent various walks of life meeting in common destination. In reverse, rays radiating out from the centre near to the horizon represent the rising or setting sun. This last aspect of radiating light directs us back to the mosque, the mihrab and its connection with the heart.

The Qur'ān describes God as universal light to see him everywhere. *'Allah is the Light of the heavens and the earth. The parable of His Light is as (if there were) a niche within it a lamp; the lamp is in a glass, the glass as it were a brilliant star, lit from a blessed tree, an olive...'* [The Qur'ān, 24:35]. This is represented by a lamp sometimes placed in the niche of a mihrab. (Fig. 3)

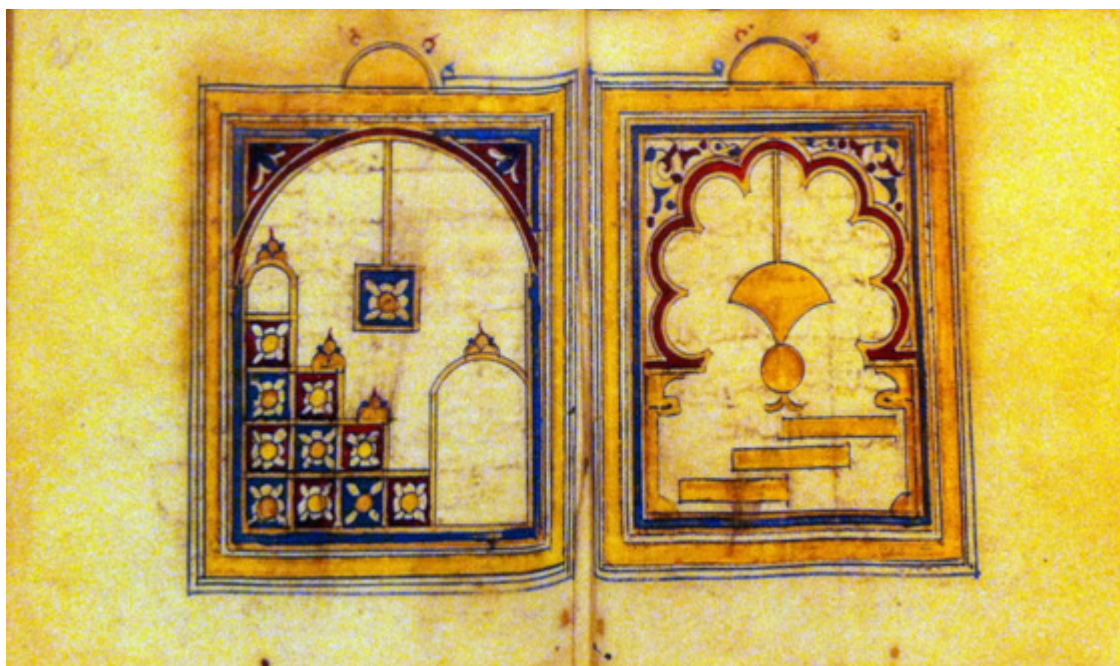


Figure 3: The prayer book of Al-Jazūli, Maghreb, before 1844 CE

On the left page, golden graves of the Prophet and his successors, *Abu Bakr* and *Umar* are shown in the Mosque of the Prophet in Medina. Above the graves, a golden lamp is suspended centrally within a lobed arch resembling to a mihrab. On the right panel, another lamp hanging above the minbar repeats its decorative pattern. The symbolism illustrates the Light-verse of the Qur'ān (24:35-36) and stresses that light and the word of God are the same in form of the lamp and the law announced from the minbar.

Islamic Book Art from Leiden Collections 'Eastern Beauty in Reproductions'. An exhibition organized by the Embassy of the Kingdom of Netherlands, with thanks to Emirates Palace Hotel, Air France-KLM. Emirates Palace, Abu Dhabi, UAE, December 2013. Source: author's photograph As God writes laws in the heart, it becomes both a sensory organ and of perception. The connection is made through the mihrab that acts as gateway between outward and inward entities, macrocosmos and microcosmos, transcendent and physical worlds. (Fig. 4) Regularity of the daily prayer is designed to set the rhythm of human life and to unify it with the rhythm of one's own heart [Nasr, 2002].

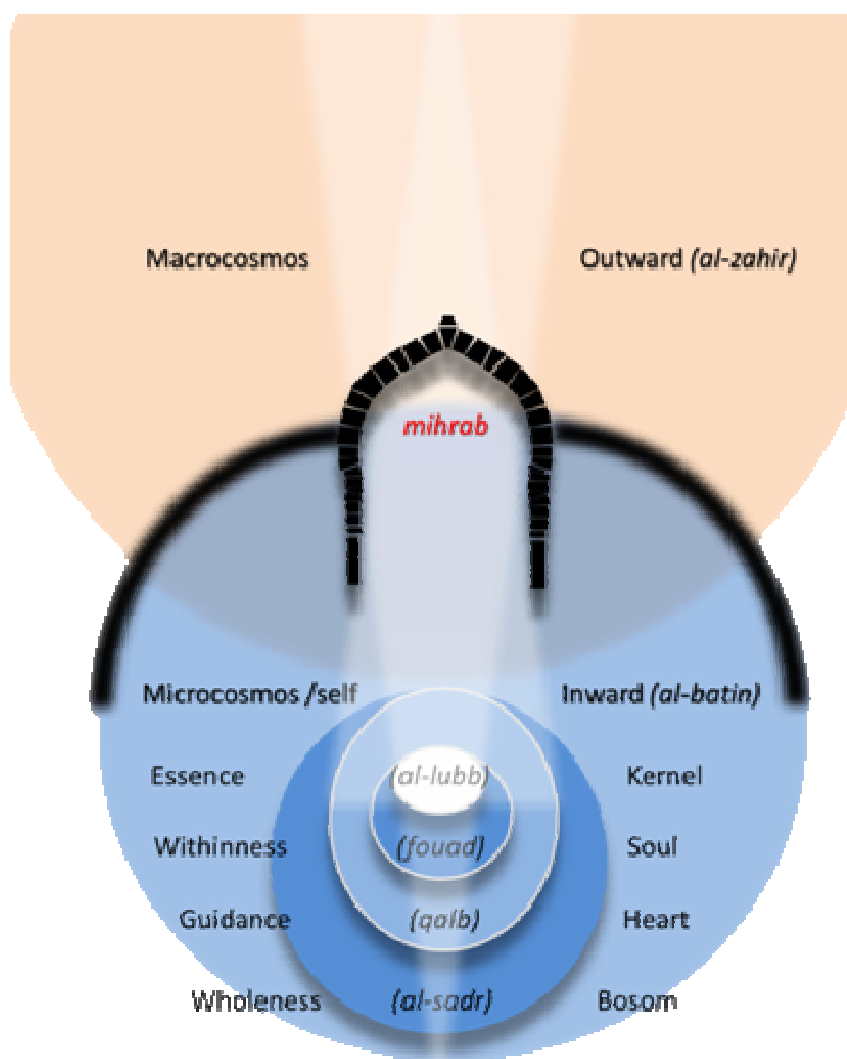


Figure 4: The inner pearl inside the shell of Islam

In Islam, God's presence encompasses macro- and microcosmos. It is for the believer to find harmony between outward world and his/her inward self. Thus, Islam is a journey of discovery in which omnipresent God directly speaks to the believer through the heart. The mosque is a place of prostration. The mihrab leads 'finally to the "prayer of the heart", ... in which the invoker, invocation and the invoked become united, and through which man returns to the Centre, to the Origin which is pure Inwardness' (Seyyed Hossein Nasr, 2002). The mihrab is the shell that protects the inner pearl, the heart; and it also communicates between the outward and inward entities.

The mihrab leads a man from the world of outwardness and separation to union with God and self and interiority. The spiritual journey takes subsequent levels all addressing the heart by its different names and aspects; employing it as facilitator. The journey starts from the divine wholeness first reaching out to *al-sadr* (bosom-heart) as for purification. Next, it is the *qalb* (physical heart) that is under direct guidance and command of the omnipresence of God. The word *qalb* derives from verb *qálaba* meaning 'to turn', 'to change'. It signifies the heart's ever-moving character that is autonomous from the self; but, it flip-flops under divine command as a leaf in the wind. As we proceed deeper, we arrive at the heart that functions as our internal eye. This is called *fouad* (emotional heart); its etymology reveals its connection with rapid fire and flames. Traditionally, *fouad* is also identified with the soul that recognizes

goodness within. The fourth heart-level, innermost entity is *al-lubb*: kernel, essence. This is the ultimate pearl nurtured and protected in the shell of the mihrab (**Fig. 5**). Al-lubb identified with the centre of the heart resonates to the concept of '*atman*', the seat of enlightened conscience in the Upanishads [Godwin, 2002].



Figure 5: Clamshell ceiling of the octagonal praying room

Representation of a shared concept in Islam and Christianity: heart conjoins physical and transcendent worlds. Ritual prayer connects the innermost essence (*al-lubb*) of the individuum with metaphysical dimensions. Al-lubb heart is the pearl that fits into the shell.

'Sursum corda' ('lift up your hearts!') - is a prerequisite of divine union in the Christian liturgy.

Mezquita and the Great Mosque of Córdoba, Spain, 784- 987 CE. Photo source: Wikimedia Commons

It is also the Word of God that illuminates the heart of man as the *mishkah* lamp (pearl) dissolves darkness in the sea-shell canopy of the mihrab [Burckhardt, 1976]. These four aspects of the heart can be associated with the four basic elements (al-sadr=earth, qalb=air, fouad=fire, al-lubb=water); they all are key for the experiencing of God, who '*re-creates the world in each instant*' [The Qur'ān 29:19]. A believer submits to God's will, whence the word *islam* (=submission) is originated from. Similarly, the term *mosque* is related to *masjed* (=place of prostration).

Ascension to enlightenment is a gradual process that takes a great effort. This is further illustrated by the *muqarnas* that is a stalactite- or honeycomb-like Islamic architectural ornamentation formed by intricate corbeling, inverted pyramids, in overlapping tiers. The technical significance is to overlay the transition between a circular dome arising above its square support. Symbolism of the muqarnas however conveys the message that the road to spiritual enlightenment leads through intricate windings and repeated setbacks. (**Fig 6**)

According to the Sufi mystic *Abdul Qadir Al-Jilani* (1077-1166 CE), God said through the Prophet: *'Man is my secret and I am his secret. The inner knowledge of the spiritual essence is a secret of My secrets. Only I put this into the heart of My good servant, and none may know his state other than Me'* [Fadiman and Frager, 1997].



Figure 6: Muqarnas in the mihrab

Ascent to enlightenment is difficult and thorny, represented by muqarnas
Nasir al-Mulk or Pink Mosque, Shiraz, Iran; 1887 CE. Source: author's photograph

The heart in the gothic cathedral

In a former publication, we proposed that the gothic cathedral could be regarded as a 'living' organism [Lozsádi and Király, 2013]. Its structure and symbolism can be observed as three, subsequent levels of consciousness; in which the nave equates to personal conscious, the choir to personal unconscious; the sanctuary to collective unconscious [Macnulty, 1991]. Furthermore, the nave is identified with the physical world, the choir with the soul, and the sanctuary with the spiritual sphere. This whole structure presents the physical and metaphysical worlds in unity. (**Fig 7**)

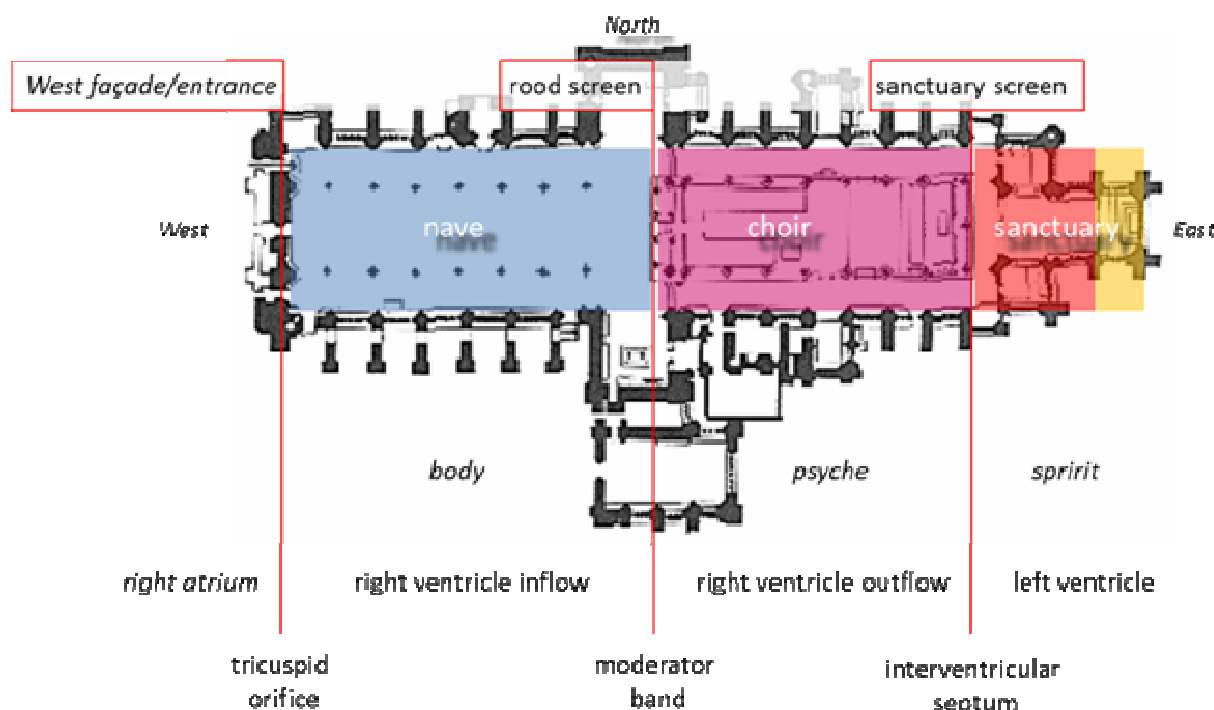


Figure 7: Structure of the gothic cathedral compared to different levels of the Aristotelian-Galenic system and the Galenic cardiac segments

Three segments of the gothic cathedral: nave (blue), choir (pink), and sanctuary (red-yellow) correspond with the respective Aristotelian-Galenic levels: body, soul and spirit. Yellow area signifies the altar/Eucharist that already belongs to the metaphysical sphere. Architectural segments can also be equated to the segments of the Galenic heart. It is of note that in Galen's view the right atrium was not a part of the heart. So, the journey starts in the West that relates to the tricuspid orifice. Ely Cathedral, Cambridgeshire, England, 1083-1375 CE

This tripartite classification was introduced as *soma* (body), *psyche* (soul) and *pneuma* (spirit) by Aristotle (384-322 BCE) [Aristotle, 1984, 2004]. Erasistratus and Herophilus, doctors of the School of Alexandria (3rd century BCE) further developed Aristotle's classification and applied it to human beings [Ogle, 1882]. In their system, each level had its own function, structure and governing organ. Thus, the primary function of the body (physical existence) was to nurture and maintain the organism. This was accomplished by the venous blood (*pneuma naturalis*) produced in the liver, distributed through the venous system. At the top level, the human brain was in charge for the spiritual functions; which, it administered via the nerves by *pneuma animalis*. Physical and spiritual domains were connected by the psyche or soul that was governed by the heart. It was the *pneuma vitalis* produced in the heart's left

ventricle that reached out to the organs – via the arteries – and replenished them with vital force (*vis vitalis*). (Fig 8)

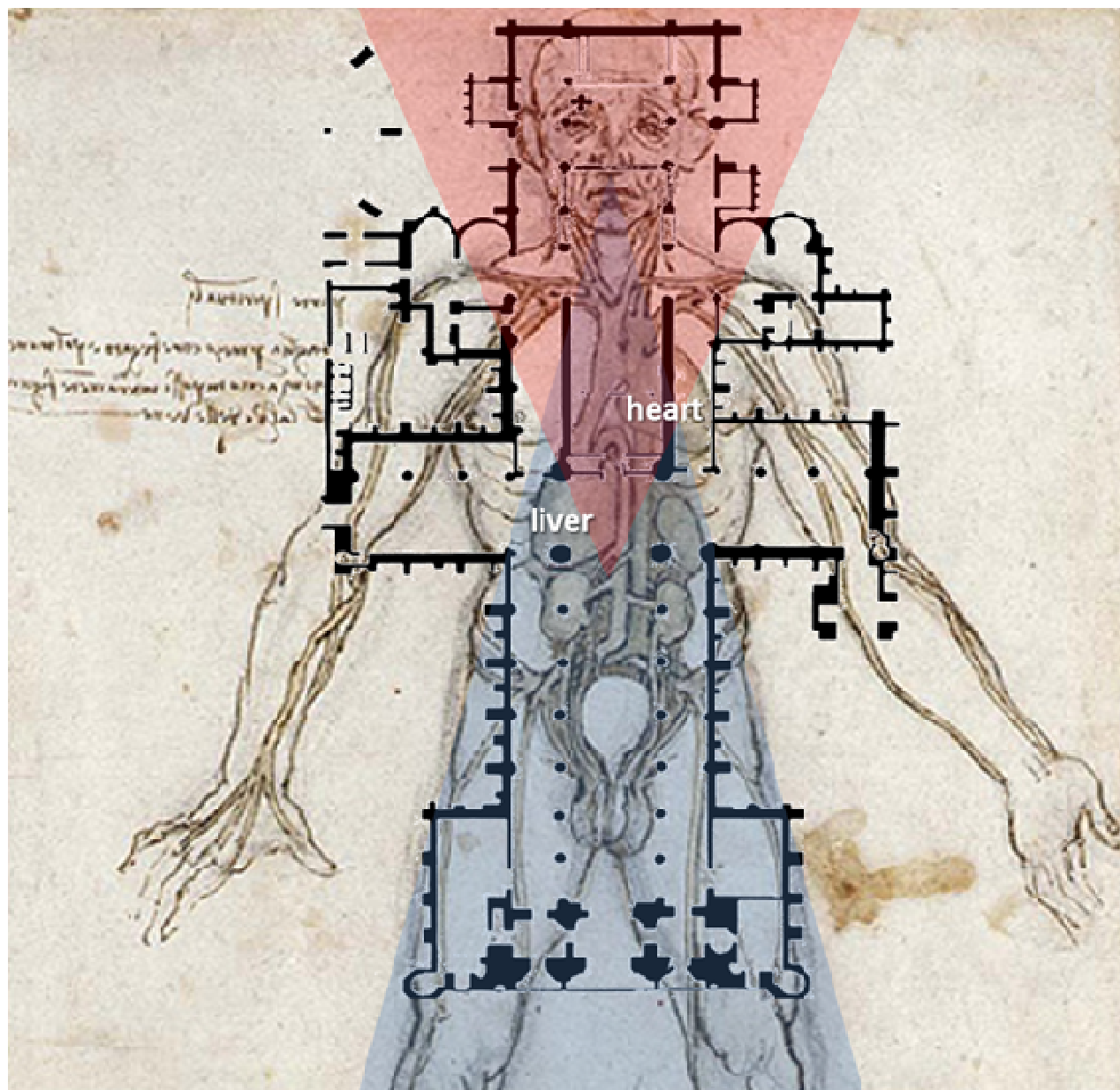


Figure 8: The cathedral as a human being

Floorplan of Lincoln cathedral (Lincolnshire, UK, 1185–1311) is projected over an anatomic drawing by *Leonardo da Vinci* (The vascular system; Clark 12597r [Clark, 1935]). Leonardo clearly depicts the Galenic system, where the heart only consists of the ventricles. The liver takes a heart-shape and appears as a pump. It is connected into two major venous tributaries driving upwards and downwards, respectively. The liver is situated in the centre of the transept and the nave of the cathedral. All other viscera –under the rule of the liver- sit in the nave. This is the level of physical existence. The heart is in the choir that is the domain of the soul. According to Galen, the brain is the ruler of spiritual faculties. The brain corresponds to the sanctuary of the cathedral. It is apparent that both the cathedral builders and Leonardo subscribed a tripartite classification rooted in the philosophy of Aristotle and Galen. Triangles of metaphysical (red) and physical (blue) domains meet in the middle zone of the heart.

Specificities of the structure and function of the tripartite system were infused into the European knowledge by the works of *Galen* (129-200 CE) [Singer, 1922; Siegel, 1962]. He was an extremely prolific author. Only a fragment of Galen's output survived, still his works constitute the half of the heritage of ancient Greek texts [Kotrc and Walters, 1979]. It was Galen's works and commentaries to them by later authors that were widely studied at the Western universities. Galen was regarded as undisputed authority until the age of *Vesalius* (1543).

Gothic style in general and the concept of a cathedral in particular is the product of an organic development in Western European architecture in the 10th-11th century CE [Toman et al, 1999]. It is, however, quite unique that we can date the birth of gothic with the start of *Abbot Suger's* constructions at St. Denis on 14th July 1140 [Marosi, 1969; Panofsky, 1979]. One may find plenty of examples for precursors of all the technical specificities of the gothic including the pointed arch, the ribbed vault and the flying buttress [Bony, 1983]. Abbot Suger's writings, however, give clear evidence that a new liturgical and philosophical concept came first and then it found its realization in architecture and arts, even in social and economic structures [Duby, 1984]. This new concept was perception of God – again – as light. '*Bright is the noble edifice that is pervaded by new light*' said Suger [Clark, 1969]. We propose that the entire liturgical concept of the gothic cathedral was to prepare the worshipper for meeting with God, with the risen Christ in specific. The Church was often referred to as the Mystical Body of Christ [Gombrich, 1950]. So, the cathedral itself can be interpreted as the manifestation of the same idea.

As mentioned, the nave equates with the body, the choir with the soul and the sanctuary with spiritual level. The nave also represents the physical world, nature, universe, mankind in it, and the level of personal conscious [Jung, 1964]. Its building element is stone and it is ruled by the laws of nature. In the Galenic system, the body's main function is maintenance and nutrition; its governing organ is the liver. The liturgic journey starts here in the nave by the command: '*sursum corda!*' ('*Lift up your hearts!*'). The striking feature of a gothic cathedral is its overwhelming verticality. The vertical plane -in most gothic cathedrals-, again, consists of three levels: the nave piers that ultimately carry the enormous weight of the canopy (passive entity); middle level of the triforium (balancing) that conjoins to the enlarged stained-glass clerestory (becomes an active entity by radiating light). The vertical structure repeats the cathedral's horizontal arrangement (supporting nave, conjoining choir and enlightened sanctuary). (**Fig 9**) '*The dull mind rises to truth through that which is material*' said Abbot Suger [cited by Clark, 1967] and the message is clear that the path leads from darkness to spiritual enlightenment in both horizontal (from West to East) and vertical direction.



Figure 9: Vertical structure of the nave repeats Aristotelian trichotomy

Most gothic cathedrals display a three-storey vertical structure of the nave. This starts with the supporting piers at the floor level; in the middle, there is a triforium that conjoins to the upper level of a stained glass clerestory. It is proposed that the vertical arrangement restates the Aristotelian tripartite concept of body (=nave floor), soul (=triforium) and spirit (=clerestory). The same arrangement is regularly repeated until nave reaches the transept. Start of the new segment (choir) is signalled by an uninterrupted pier spanning from the floor to the canopy (*arrows*). The sanctuary –again- resumes three-storey arrangement.

Cathedral of Köln, Germany, 1246-1460 CE. Source of photo: Wikimedia Commons

As for *'the mystery had to be protected from the lay community'* [Burckhardt, 1995], direct entrance from the nave to the sanctuary is blocked by a rood screen (*cancelli*) and the choir. Initiation and ritual preparation is a key element in all religions [Armstrong, 2010]. Separation of the profane from the sacred space serves the integrity of both. It is the Church who fulfilled the task in Christianity to act as gatekeeper and mediator. The choir attends the same role in the cathedral. There are wooden stalls for the common prayer of monks therein. Priestly order of monks - retired from the burdens of everyday life and oriented towards the sacred - effectively bridge these two. Whence comes the name *pontifex* (Latin for bridge-builder) for priests. The heart undertakes the same role in the tripartite system: it bridges and communicates between the physical and spiritual spheres.

As stated, nave is the place for preparation, so the sanctuary is for the ritual. Heart prepared a man in the nave, then it accompanied him/her through the choir; in the sanctuary, the heart is an object of rebirth. *'I will give you a new heart and put a new spirit in you; I will remove from you your heart of stone and give you a heart of flesh.'* (Ezekiel, 36:26) [The Bible] The meaning of this new heart is one that is God-willed, not self-willed. We may recognize the same concept of enlightenment by God's will and Word that was mentioned in the context of a lamp placed in the mihrab.

Discussion

Modern science regards the heart as a pump, maintainer of circulation. This function renders it in the physical reality. Our common thinking also recognizes another, symbolic heart that is a source and repository of our feelings, desires and demons. These two connotations are kept separate; we do not anymore identify e.g. structures of the cardiac anatomy with emotions like love. Traditional thinking, up to the age of Descartes, did. Aristotle's classification of a living organism into soma, psyche and pneuma, with Galen's refinements, assigned certain faculties to dominant organs of those domains. In this respect, the heart was universally regarded as the seat of the soul. Its main function was to vitalize the organism and to connect its different parts. There was though a debate whether the heart or the brain was of the centre of conscious self. Aristotle opined for the "third" ventricle of the heart, whereas Galen argued for the brain [Platt, 1921; Harris, 1973]. Furthermore, the 8th Ecumenical Council meeting in Constantinople (869-870 CE) abolished the spirit from man, declaring in its Canon 11 that a human being only consisted of body and soul [Boardmann, 2008]. The spirit was sent back to God; the soul gradually moved to the brain. Rational intellectualism developed and spiritual insight declined in the West.

The heart retained its direct connection with both metaphysical and physical spheres in Eastern cultures [Burckhardt, 1967]. In Islam, however, man is no longer the measure of all things, but God who permeates everything in micro- and macrocosmos [Romana Romani, 2009]. We presented, that its concentric layers enabled the heart to directly perceive God's word and light.

It is acknowledged that ongoing encounters with the East significantly contributed to the rise of European scholasticism and the birth of the gothic style in the 11th to the 13th centuries [Clark, 1965; Burckhardt, 1995]. Panofsky further demonstrated that the gothic cathedral was a scholastic and coherent union of the physical and metaphysical worlds [Panofsky, 1957]. The conjunction is mediated by the middle part, i.e. the choir of the cathedral. The choir is

identified with the psyche and the heart. It is an important difference from Islamic symbolism, where direct, un-mediated connection with God is essential, that the heart of the cathedral acts on behalf of the choir. In other words, the conjunction is made by a bridge-builder (*pontifex*), i.e. the Church. Gothic architecture divides and multiplies parts out of parts of homologous parts (called '*similitudes*'). This method also assimilates gothic to Islamic patterns and sacred geometry. It is also directly related to the Platonic-Aristotelian idea of unity of the microcosmos and macrocosmos [Aristotle, *Meteorology*]. Due to this common foundation of symbolism, further comparisons can follow, e.g. structural characteristics of the cathedral and the Galenic heart can be equated [Lozsádi and Király, 2014].

Although both the mosque and the gothic cathedral centre on man, no direct anthropomorphic ratios are featured. This character was aptly noted by *Vasari* who based his criticism of the gothic style on the very lack of human ratios [Vasari, 1550]. Apparently, the mosque and the gothic cathedral relate to a deeper symbolism and precursor ideology, - namely Aristotle-Galen's concept of man - both applying a ritual of the heart.

Bibliography

- ABRAHAM J: Neurosciences – a neurosurgeon's perspective. *Neurol India* 47 (1999): 3-7.
- ARISTOTLE: [Aristotle. Meteorology. Translated by: E. W. Webster. Kessinger Publishing, Whitefish, MT, 2004. http://classics.mit.edu/Aristotle/meteorology.html](http://classics.mit.edu/Aristotle/meteorology.html), <http://etext.library.adelaide.edu.au/a/aristotle/meteorology/>
- ARISTOTLE: *Historia Animalium. De somno et vigilia.* 3, 458a15-19. In BARNES J: *The Complete Works of Aristotle.* I. Princeton University Press; 1984.
- ARMSTRONG K. *The Case for God. What religion means.* London, Vintage Books, 2010.
- BONY J: *French gothic architecture in the twelfth and thirteen centuries.* Berkeley, University of California Press, 1983, 17.
- BAER, E: *The Mihrab in the Cave of the Dome of the Rock.* In *Muqarnas III: An Annual on Islamic Art and Architecture.* GRABAR E (ed). Leiden, E.J. Brill, 1989, 9-19. http://archnet.org/library/documents/one-document.jsp?document_id=3641
- The BIBLE, New International Version: American Bible Society, 1995. <http://www.biblegateway.com/passage/?search=Ezekiel+36%3A26&version=NIV>
- BOARDMAN T: *The Enigma of Canon XI. The 'Abolition' of the Spirit – The Year 869 & Its Significance in the Destiny of Europe.* *New View* 2008/1: <http://www.monju32.webspace.virginmedia.com/Council%20of%20869.htm>
- BURCKHARDT T: *Art of Islam: Language and Meaning* (transl HOBSON P). London, Islamic Festival Trust Ltd, 1976, 93.
- BURCKHARDT T: *Sacred Art in East and West.* Bedford, Perennial Books, 1967. (A szakrális művészet lényegéről. Fordította: PALKOVICS Tibor. Budapest: Arcticus; 2000.)
- BURCKHARDT T: *Chartres and the Birth of the Cathedral,* translated by STODDART W. Ipswich, England: Golgonooza Press, 1995. (Chartres és a katedrális születése. Fordította: PALKOVICS Tibor és NAGY Csaba. Budapest, Arcticus, 2001.)
- CLARK K: *A catalogue of the drawings of Leonardo da Vinci in the collection of His Majesty the King at Windsor Castle.* Cambridge, 1935.
- CLARK K: *Civilization. The Great Thaw.* The complete BBC series, 1969. BBCEVD

1607. 2005 Edition.

DUBY G: Les temps des cathédrales. L'art et la société. 980-1420. Paris, Galimard, 1976.
(A katedrálisok kora. Fordította: FÁZSY ANIKÓ és ALBERT SÁNDOR. Budapest, Gondolat, 1984)

FADIMAN J, FRAGER R (eds): Essential Sufism. HarperOne, San Francisco, 1997, 105.

FRISHMAN M, KHAN HU (eds): The Mosque. London, Thames and Hudson, 1994.

GODWIN G: Heart. A personal journey through its myths and meanings. Bloomsbury, London, 2002, 37.

GOMBRICH EH: The story of art. London, Phaidon, 1950. (A művészet története. Budapest, Gondolat, 1974.)

HARRIS CRS: The Heart and the Vascular System in Ancient Greek Medicine. Oxford, Clarendon Press, 1973.

JUNG CG(ed): Man and his symbols. Chicago, Ferguson Publ, 1964. (Az ember és szimbólumai. Fordította MATOLCSI Ágnes. Budapest, Göncöl, 1993.)

KOTRC RF, WALTERS KR: A bibliography of the Galenic Corpus. A newly researched list and arrangement of the titles of the treatises extant in Greek, Latin, and Arabic. Trans Stud Coll Physicians Phila 1, No.4 (1979): 256–304.

LOZSÁDI K, KIRÁLY L: Art, myth and philosophy of the heart. (Szívparafrázisok. Művészet, mítosz és filozófia a szívről- in Hungarian) Budapest, Medicina, 2013. ISBN 978 963 226 436 3

LOZSÁDI K, KIRÁLY L: Representation of the Galenic system in the structure and symbolism of the gothic cathedral. (Még egyszer a szívkatedrálisról. Paradogmák a szív szimbolikájához- in Hungarian) Lege Artis Medicinae. Accepted for publication, 2014

MAROSI E: Medieval art. (A középkori művészet világa – in Hungarian) Budapest, Gondolat, 1969, 8.

MACNULTY KW: Freemasonry: A Journey through Ritual and Symbol. London, Thames and Hudson, 1991, 28.

NASR SH: The heart of Islam. Enduring values for humanity. New York, HarperCollins, 2002, 314.

O'KEEFFE G: Slightly open clamshell. 1926. Pastel on white ground on paperboard, 18 ½ x 13 in. Wadsworth Athenaeum Museum of Art, Hartford, CT.

<http://thewaking.tumblr.com/post/55966991977/georgiaokeeffe>

OGLE W. Aristotle on the parts of animals. London, 1882.

PANOFSKY E: Gothic architecture and scholasticism. Cleveland and New York, Meridian Books, 1957. (Gótikus építészet és skolasztikus gondolkodás. Fordította: SZEGEDY-MASZÁK M. Budapest, Corvina, 1986.)

PANOFSKY E: Abbot Suger on the Abbey Church of St Denis and its art treasures.

PANOFSKY E, SOERGEL G(eds). Princeton, 1979. (In Hungarian: Suger apát beszámolója a st. Denis-i építkezésről, in MAROSI E: A középkori művészet világa. Budapest, Gondolat, 1969, 140-161.)

PLATT A: Aristotle on the heart. Studies in the History and Method of Science 1921;2:520.

The QUR'ĀN. Saheeh international translation. With Surah introductions and appendices. The Qur'ān Project. Edited by AL-MEHRI AB. Birmingham, Maktabah, 2010.

ROMANA ROMANI F: Ancient Islam. History and treasures of an ancient civilization. Vercelli, White Star Publ, 2009, 10.

RONNBERG A, Martin K (eds): The book of symbols. Reflections on archtypal images.

Tascehn, Köln, 2010, 212-217. www.aras.org

RYSEVAITE K, SABURKINA I, PAUZIENE N, NOUJAIM SF, JALIFE J, PAUZA DH: Morphologic pattern of the intrinsic ganglionated nerve plexus in mouse heart. Heart Rhythm, 8, No. 3, (March 2011): 448–454. <http://dx.doi.org/10.1016/j.hrthm.2010.11.019>
SIEGEL RE: Galen's Experiments and Observations on Pulmonary Blood Flow and Respiration. Am J Cardiol 1962; 10: 738.

SINGER CH: The discovery of the circulation of the blood. London, G Bell, 1922.

TAMURA Y, NAKAMURA H, IEDA M et al: Neural crest stem cells supply intrinsic cardiac adrenergic cells and contribute to reinnervation after cardiac transplantation in mice. Circulation, 120 (2009): S1179.

TOMAN R, BEYER B, BORNGÄSSER B: Gothic Age: architecture, sculpture, painting. London, Konemann UK Ltd; English edition, 1999, (Gótikus stílus. Fordította:

HARMATHNÉ SZILÁGYI Anna, KÉZDY Beatrix ÉS KÖRBER Ágnes. Budapest, Vince, 2000.)

TOMAN R: Romanesque: architecture, sculpture, painting. London, Ullmann Publishing; 1 edition, 20 Oct 2010. (Román stílus. Fordította: HAVAS Lujza és KÖRBER Ágnes. Budapest, Kulturtrade, 1998.)

VASARI G: Le vite de' piú eccellenti architetti, pittori, et scultori italiani, da Cimabue insino a' tempi nostri. Proemio della seconda parte delle vite. Nell'edizione per i tipi di Lorenzo Torrentino - Firenze 1550. <http://bepi1949.altervista.org/vasari/vasari39.htm>