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Fear and Bernard of Clairvaux's Living Stones

In his series of sermons celebrating the dedication of churches, Bernard of Clairvaux (1090-1153) rhetorically asked, “What sanctity can be had by the stones, these that we celebrate with solemnity?” Bernard, the mellifluous doctor and the last father of the church, was the literary genius who heralded the reform of monastic practice through a return to strict adherence to the Rule of Saint Benedict. He is best known for building and strengthening the Cistercian Order as the movement’s leader and as the Abbot of Clairvaux. Bernard answered his question about sanctity by implying that the stones were like the bodies of his monks in that they were vessels pneumatically transformed by the power of God.

Filled with sanctity and honor, the stones of the consecrated church were literally living beings. Medieval lapidary lore placed stones into a special Aristotelian category in which they were understood as animate and capable of achieving mystical perfection. The crafting of these special stones provided an analogue for the preparation of his monks to achieve mystical union with God. In his *sententiae* and in his *Sixty-Second Sermon on the Songs*, Bernard revealed the repair of the stone wall as a transformation of the body of the church and the body of the monk.¹

The wall became bright as the stones were carefully shaped, polished and signed. The monk's inner vision opened when exposed to the light from the wall. For Bernard, it was fear that caused the perfection of the monk. He explained the role of fear—*metum*—as a constant check to the hubris of the monk in *The Steps of Humility and Pride*. Fear made the bent—*curva*—monk straight—*recta*. He did not similarly explicate the emotional transformation of the matter of walls into the living body of the church.

The Return of Craft

In the twelfth century, crafting human and stony bodies prepared earthly matter to return to God, and thus functioned as a material reminder of the demiurge's creation as a gift and promise of the heavenly rewards to come. Carved rock was simultaneously a mnemonic device for recollecting God's creation of the cosmos and for humans re-enacting his activity as gift to return to Him. Craft thus wove together medieval memory with embodied practice as an ethical orientation and reformation of the world. Richard Sennett's *The Craftsman* has argued for a secularized version of just such an ethical engagement for the contemporary artisan.² Scholarship such as Sennett's tends to exhibit nostalgia for craft without engaging its long historical relationship with metaphysics. Bernard's living stones of the church provide insight into that history, which can be mined to better comprehend what craft might be today.

Twelfth-Century Matter

Stone in the twelfth century was not the inanimate artifact of geological processes. For Bernard and his contemporaries, stone had the potential to be a material instrument that revealed God's animating force within the world. Lapidaries like Marbode of Renne's (1035-1123) multiple

treatises on stone documented the existence of rocks, bits of glass, amber and other materials that were miraculously the efficient cause of change.³ The magic of these stones consisted in the apparent ability to reproduce and to attract or repel other objects at a distance. Typically, the power to act was demonstrated by a stone's capacity to contain light. This was especially true of magical gems like chalcedony.

As long as it is in the house, Chalcedony does not shine but under the sky, that is under the open air, it brightens. ... Warmed by the sun's rays or, by rubbing of the fingers it attracts chaff to it. By this those who conceal their goodness are represented, and [also represented are] those who make good works in secret... [Christians] breathed upon by the radiance of the true sun, that is, Christ, or handled and warmed by the fingers, that is, by the gifts of the Holy Spirit... they draw the chaff, that is sinners, to themselves, and they ally [sinners to themselves] and they admonish them to persevere in good works.⁴

But the exemplar of the special stones was the magnet, which drew other matter to it and could transfer its power of attraction to a mass of iron.⁵

The ability of a stone to cause movement was not inherent within the stone itself. Under the influence of Christian Neo-Platonism, twelfth-century theologians perceived the cosmos as an incomplete material analogue of divinity. The world contained the potential to become divine unrealized. Crafting the world remade it as a divine reflection. This reflective act prepared the world for the infilling by God, which would cause it to move back to him.

In the medieval understanding of matter, stone had a desire or will but no ability to act on that will. This placed it in a lower Aristotelian category than a plant, which was believed to move in response to its own desire for God. As a result, movement caused by

a stone like the magnet was evidence of a direct relationship between divine power and the terrestrial realm.

Aristotle defined four causes: material, formal, efficient and final.⁶ In twelfth-century natural philosophy, the material and formal causes were the result of God's initial creation. The material cause was the potential of the thing to come into being, such as the cup that existed within the clay but was not yet formed. The formal cause was the pattern and proportion of the thing to come into being that dictated the shape of the thing to be. Michelangelo's *Slave* sculptures emblemize the material and formal causes through the emergence of the form of the sculpture from within the matter of the blocks of marble from which they are to be carved. The efficient cause is that which produces the cause. In the case of the *Slave* sculptures, Michelangelo is the efficient cause. The final cause is the purpose or end of the work. Final cause provides the answer to why a thing exists.

When a stone acted in the Middle Ages, it was the singular result of God's intervention as efficient and final cause. Artisans forming and shaping—formal cause—the opaque and rough matter of the earth—material cause—by filing, grinding and polishing could reveal light mysteriously contained within it. The light within was a sign of God's presence. Some of the stones, the magnet in particular, not only caused movement but also could pass along the capacity to move to other matter.⁷ These stones not only pointed toward God, they acted like God by gifting the sign of their divinity—light within and the potential to cause movement—to their lesser 'brother' stones—iron. As tropological exemplars, these stones functioned efficiently to convey God's end for the material world as the means toward engaging in divine creative work. Special stones thus revealed divinity in the world.



Figure 1 Signature stones near an arched opening in the Abbaye de Notre-Dame de Sénanque (founded 1148). Photograph by author.



Figure 2 View facing the altar of the Abbaye de Notre-Dame de Sénanque (founded 1148). Photograph by author.

Divinity Contained

In medieval cosmology not all stone was created in a state that allowed it to function as a conduit for God's presence in the world.⁸ But stone was crucial in the Middle Ages for understanding how and why matter could become a container of divinity. In brief, crafting, shaping, and polishing stone prepared it to be a vessel that could be filled with God's animating power. God as the light that appeared within the transformed matter vivified the stone, re-connecting terrestrial and celestial realms. Bernard's *Sermons on the Dedication of Churches* relied on the tropological exemplar provided by the crafting of stone to reinforce his message that the church was consecrated when filled by the ecclesia. For Bernard, filling the church walls with his monks was a ritual co-enactment to God's infilling of the church's stones. In both cases, dead matter transformed into living bodies. For this animating consecration to be successful, the men and the stones had to be joined together reflexively in the same emotional state, a state of fear.

Although miraculous stones like the magnet revealed God's presence they did not provide a tropology that could be followed by humanity. More quotidian stones, however, did provide an example for humans preparing for mystically union with divinity. Hugh of St. Victor (1096-1141CE), the Parisian theologian who theorized the role of craft and memory in medieval exegesis, and Bernardus Silvestris (1085?-1178? CE), a magister of Tours who wrote ingenious poems on cosmology and astrology, placed the transformation of stone at the heart of their understanding of the two creation myths in *Genesis*.⁹ The initial creation was of something like Aristotelian prime matter, and the second creation was the subsequent crafting of that matter into the cosmos.¹⁰ They understood the crafting of creation as being the equivalent to constructing a wall that separated out the inherent chaos within prime matter from the potential of it to complete God's plan.¹¹

The proper disposition of matter was the divine plan for the completion of the cosmos. God's act of creation thus hid the potential of redemption within created matter, and provided insight into how redemption could be achieved. Hugh and Bernardus used the Latin term *moles*, which denoted a boulder, a mass, a bulwark, or a crowd to name God's acts of creation and to act as the exemplar of the activity of humanity to follow.

So far as I have been able to conjecture from what I have found truthfully expressed in scripture, whether clearly or obscurely, on this matter, the first mass of all things (*rerum omnium moles*), when it was created, proceeded then to be there where it now subsists in its formed state...but it was so enveloped (*involutum*) by the other elements which were spread (*oppansis*) about on all sides (*circumquaque*) like a cloud (*nebulae*) that it could not appear what it was.¹²

Bernardus used *moles* to describe the proper and improper disposition of the soul and body of a human. For a human being obsessed with the terrestrial realm and thus unaware of God's plan, the body was a pile of stones that hid the soul.

34 as if in a body having been buried (*sepulta*) within a pile of stones
 35 The soul which is bright (*iubar*) by birth, returns back (*redibit*) to
 the rule (*regna*) of the father
 36 If it might be wise (*sapiat*), if not, it will be married to the flesh
 (*conjuga carnis*)¹³

By conforming to God, the body became a tomb. The transformation from the chaos of the body to an ordered construction of stone allowed the soul to shine.¹⁴

In his *first sermon on the dedication of churches*, Bernard borrowed a mixed metaphor of metal and stone from Isaias 41:7 to explain the transformation of body and stone construction. In *Isaias* the prophet described a coppersmith who shaped individual bits of copper and then nailed them to a form. Once fixed, the smith permanently soldered the pieces together and thus unified the metal parts into a copper vessel. Bernard described that the joining of stone and brother occurred by 'soldering' but with knowledge and love: *Glutino bonum est. Duplici igitur sibi cohaerent lapides illi glutino cognitionis et perfectae dilectionis.*¹⁵

The dedication ceremony consummated the act of building by fusing the bodies of his brothers into a single body. The *Rule of Benedict* is implicit in Bernard of Clairvaux's and Bernard Silvestris's stone and flesh walls, which figuratively are the brothers of a monastery, joined together in the shared fear of God. It is the fear, which leads to charity and love.¹⁶ Regulating bodies and stones prepared them to be unified into a whole that reflected the possibility of God's acceptance. Adhering fixed matter into its proper form and thus prepared it to be returned to the divinity. Bernard noted that it was only by soldering that the dwelling place for God was created. The unity of his community, like the unity of the wall, removed the division from God to allow the deity to enter and sanctify the church by filling it with light.¹⁷ If either monks or stones were disunited, so was the church.

In each of these cases the body was a *moles*. Bernardus's conceptualization of the body points toward Hugh's more general framing of crafting matter as the tropological function of the created world. In the prologue to the *de sacramentis*, Hugh noted that God created the world so that humanity could make the terrestrial realm beautiful.

For even the rational creature itself was first made unformed in a certain mode of its own, afterwards to be formed through conversion to its Creator; and therefore matter unformed but afterwards formed was shown to it, that is might discern how great was the difference (*distantia*) between being and beautiful (*pulchrum*) being. And by this it was warned not to be content with having received being from the Creator through creation, until it should obtain both beautiful being and blessed (*beatum*) being, which it was destined to receive from the Creator through the conversion of love (*amoris conversionem*).

By making the world beautiful, humanity participated in God's work and was beatified.¹⁸ Sanctity became possible through crafting and crafted stone.

The Redeeming Wall

Bernard's *Sixty-Second Sermon on the Song of Songs* expanded upon the relationship between redemption of the world and a stone wall.¹⁹ For Bernard, the repair of the wall was an enacted metaphor. It was thus both a symbol of potential divine presence and a material model to be followed.²⁰ In *Sermon Sixty-Two*, he described the cosmos after the fall of man as a wall in which several of the stones—imagined as former angels—have been destroyed.²¹ According to Bernard, this cosmological wall must be repaired to restore its divinely intended condition. Bernard described the repair as the patching of holes by filling them with the monks of his Cistercian communities. The wall could then be plastered and smoothed into a unified body. Patching and smoothing the wall caused it to undergo a transformation in which it would become bright. Crafting the wall repeated and reinforced the labor of the monk, which was necessitated by the Rule of Benedict as the means to rectifying, the

repair of its bent condition, of the monk's body through flagellation and the monk's soul through reading and prayer.

[I]n time... fill up those ruins and dwell in those crannies [of the wall] both in body and mind. Then she will brighten with the presence of her countless members those empty domiciles abandoned by the former inhabitants. No longer will crannies be visible in the wall of heaven, happily restored again to perfection and completeness.²²

The brightness of the wall filled the hearts and opened up the spiritual vision of the monks crafting it.²³ He made a similar reference in the *Third Sermon on the Dedication of Churches* where he noted that the walls must be cleansed by whitewashing.²⁴

God not only [white-washes us] but inscribes us with his finger, (*Exodus* 31:18) in this he casts out demons, without doubt in fact as the Holy Spirit. He inscribes, it is said, his law, not in stone, but in the stone tablet of the fleshy heart, thus he fills the promise of his prophet, through which he promises he will take away the heart of stone, and he will make (give over) the heart of flesh. (*Ezech.* 11:19), it is not hard, not firm, not Jewish, but pious, but mild, but formable, but devoted.²⁵

The change in the hearts of the monks was a reference to *Ezekial* 11:19 and 36:26 in which God takes away the stony heart of the fallen and replaces it with a heart of flesh. Bernard's mystical ascent was a transformation by melting stone. The origin of stone in twelfth-century interpretations was understood as a cooling and hardening process that evokes the freezing of ice.²⁶ The knowledge that ice melts, as do metals and glass, resolved a medieval difficulty within the *Timaeus*. The *Timaeus* functioned as a guide for medieval cosmology, but Plato failed to clearly

identify how the propagation of the elements downward could return the earth to unity with the demiurge. William of Conches (1090-ca. 1154) espoused the common wisdom of stone being similar to ice to resolve the problem. Hildegard of Bingen (1098-1179) proposed a related theory for the formation of stone in her *physica*, which suggests the hardening of molten lava. She explained that gems formed from the drying and hardening of a foamy substance on the surface of rivers that was analogous to the hardened residue left behind when water was poured over a hot iron.²⁷ Stone could transform into earth or water.

The solidification and liquefaction of stone thus provided a path up the hierarchy of the elements and back toward divinity.²⁸ Bernard deployed this understanding of the transformation of stone into water in his *Sermons on the Nativity* where the five wounds of Christ, the *sphragis*—literally, gemstones—became ever-flowing fountains when the divine man ascended into heaven.²⁹ With rocky matter as the material cause the clay of Adam's body in *Genesis* and the material of the church, Bernard's theological and natural philosophical understanding of stone offered guidance to how his monks lived and to how they built their churches.

Fabricating the Ecclesia

Bernard's discussions of stone and its transformation were not simply metaphorical. Cistercian monks built their churches. The stained glass windows that brightened the walls of the church were stones created and crafted through the liquefaction and reforming of raw silica and glass.³⁰ The iconography of these windows abstractly or figuratively offered a view into the gardens of paradise. The monks also carved, placed, and plastered the stones that made up the walls of the church. This activity was significant enough to them that they would often

sign the stones that they crafted. In effect the brothers of the church gave the stones new names, something which God had promised them in *Revelations 2:17* where at the end of time they would receive an engraved white stone inscribed with their new name. Navigating the cloister, the brothers of Cistercian monasteries, encountered these engraved souvenirs of their future inheritance in the form of the sigil stones embedded in the masonry of their cloister and church walls. In the *First Sermon on the Dedication of the Churches* Bernard stated that God completes the walls of the church by whitewashing them with the direct touch of his finger.³¹ This occurred after the stones of the wall were *soldered* together—a technique suggesting the melting and fusing of the stones into a single entity.³²

Bernard continued this line of thinking in his *Second Sermon on the Dedication of Churches* where the bodies of the monks dissolve into a unity that transforms stone walls into the *walls of love*.³³ The aim of the unifying construction of the wall of the church and the community of monks is the dissolution of each into love—*caritas*—as a mystical state of being analogous to the experience of the godhead.

To love in this way is to become like God. As a drop of water seems to disappear completely in a quantity of wine, taking the wine's flavor and color; as a red-hot iron becomes indistinguishable from the glow of fire and its own original form disappears; as air suffused with the light of the sun seems transformed into the brightness of the light, as if it were itself light rather than merely lit up; so, in those who are holy, it is necessary for human affection to dissolve in some ineffable way, and be poured into the will of God. How will God be all in all if anything of man remains in man? The substance remains, but in another form, with another glory, another power.³⁴

As the Cistercians built their church they participated and witnessed the transformation of a chaotic jumble of matter into the refined body of the church, which simultaneously was its literal stone and the community of the brethren. Once constructed the church persisted as a mnemonic device that would daily remind and encourage the monks to prepare their own body to shine through careful regulation and crafting of their flesh. But this work only prepared the stone and the men to receive the mystical experience through God's touch.³⁵

The building of the church was a key part of the Cistercian's adherence to the *Rule of Benedict—The Steps of Humility*—in which labor prevented one from being distracted

from pursuit of God. In its highest form, such as the crafting of the church, labor was a mystical act of prayer.³⁶ Bernard's interpretation of the *Rule* was unique in that it

“ Dead stones thus became living walls through the unified love of the community that built and filled it. ”

established the proper disposition of his monks as being in an absolute fear of God.³⁷ This is curious as it upended the traditional structure and goal of following the Rule. Bernard acknowledged this inversion in the retraction he appended to the *Steps*. He noted that despite the request to comment upon his understanding of ascending *The Steps of Humility*, he had only been able to outline the descent of the steps of pride. Cistercian abbey churches experientially reflect this descent. A beautiful example exists at Fontenay Abbey, founded by Bernard of Clairvaux in 1118, where a large staircase leads down from the dormitory into the transept. Similarly a stair-shaped fountain separates the garden behind the cloister from the fields and wilderness in the valley beyond. Each morning as they entered the church to pray and as they returned from the fields where they worked, the monks would be reminded that their entry into

sacred space was not simply a memory but a reenactment of Adam's fall from grace.

For Bernard any ascent of the steps of humility that appeared to result in a unity with God fostered hubris and a misguided belief in accomplishment. A monk's acceptance of progress upwards swelled him with pride and separated him from his community. The only recourse was to recognize that any movement toward becoming more humble was also a descent into a deeper and more problematic pride that emptied the monk of any relation to God. At the moment that a monk reached the pinnacle of humility, he also achieved an absolute form of pride absent of care for anything outside of himself. This state was the opposite of a life of *caritas* and revealed the vacuum within the monk where God should be. For Bernard it equaled being expelled from the community of monks as dead to the world.

In effect the best condition that Bernard's monks could hope to obtain was that of a dead material shell emptied of any independent will. As an empty shell, the monk could either continue in depravity, or his brothers could rescue him and draw him back into the community through their love for him. The act of his brothers placed him back on the first level of the steps of humility, which in the Rule was the submission to an absolute fear—*metum*—of God.³⁸ In *Sermon 24 On the Song of Songs*, Bernard described this change in orientation from the world back to God as the making straight—*recta*—of the bent—*curva*—monk. Fifty years later, Peter of Celle (ca. 1115-1183), who was sympathetic to Bernard's theology, would exhaust Bernard's metaphorical straightening of the body with a detailed comparison of the reformation of the body to the construction and finishing of a smoothly, plastered wall. Peter implied that self-flagellation was the means by which the body was crafted into a proper state of fear.³⁹

The Wonder of Fear

Etienne Gilson and M.B. Pranger have separately noted that for Bernard the fear experienced as the simultaneous beginning and summit of the mystical ascent was not terror.⁴⁰ Instead it was the awe of God that could be obtained through suffering. Fear could be psychological as is the case in Bernard's *Steps* or physical as in Peter of Celle's implication of the purpose of flagellation. Signing the stones completed the process of perfecting the earthly matter and anticipated the new names the monks would receive at the end of time.⁴¹ They perceived suffering as a means of inspiring the awe toward God that would allow the monk to be filled with God's transformative power as light. Suffering was necessary to construct fear in a Cistercian monk, and it was a precondition of mystical experience. For the stones of the church, about which Bernard rhetorically inquired in the *First Sermon on the Dedication of Churches*, the same suffering was necessary to orient the building toward God. While stones like the magnet or amber, which were inherently containers of divinity, more quotidian stones existed in a condition similar to the Cistercian monks. Like malformed stones, the monks might be described as maladjusted in their pride. Monks and stones required straightening to turn back to and receive God. Crafting stone to build the church labored to succeed at both tasks. By giving proper shape to a stone, the monk transformed it to a condition by which it could be united with its brother stones. This, in effect, placed the stone in a state of awe or fear toward God. For the monk, the experience provided more. Crafting the stone revealed the emotional state the monk was striving to achieve while at the same time allowing him to work toward that condition through the care of the stone that he carved. The crafting monk stood in awe of God's handiwork revealed in and through the potential of the stone by engaging in the act of love that joined him with his community in creating the church. Dead stones



Figure 3 Side chapel in the Abbaye de Notre-Dame de Sénanque (founded 1148). Photograph by author.

thus became living walls through the unified love of the community that built and filled it.

Postscript

Recently Michael Stacey voiced an underlying desire within architecture and design disciplines to redefine craft for contemporary digital practices. He asked, “Can the digital design of architecture be considered a craft, even if there is no haptic element beyond the lowering of keys and the clicking of mice?”⁴² Stacey follows his question with the development of an understanding of design processes as reflexively interdependent tasks. In doing so, he argues against Sennett’s understanding of artisanship as an embodied practice.⁴³ Stacey believes in digital design as a mental craft, but his position ignores the twelfth-century interpretation of craft presented in this essay as an ethical act that transforms the world and the artisan as a mystical practice.⁴⁴ Stacey, intuitively, has asked what would likely be media theorist Vilem Flusser’s question about the impact of technology on culture in which the gesture of the mouse-click, the reduction of our embodied presence to a simple tap, is considered a form of artisanship, requiring a major shift in the ontology and epistemology of craft.⁴⁵ Building upon Bernard’s historical interpretation of craft suggests that the questions about digital craft must be altered to engage the moral dimensions of craft practices. “How does the pushing of buttons transform our world and our selves as an ethical practice?” If the notion of digital craft is to be taken seriously, this question must engage the body as an integral aspect of creation.

[Endnotes]

1 Short commentaries on scriptural passages, *notae*, were a common method of providing guidance for the interpretation of scripture to monks and brothers as part of their educational experience. *Sententiae*, literally “senses”, of scripture were a more

formalized note-taking exercise that every monk undertook upon Peter Lombard's own scriptural commentaries to become a master. Bernard's series of sermons on the *Song of Songs* are his most famous work. These written sermons, spanning four volumes of work, are masterpieces of medieval rhetoric that transform the biblical account of erotic love between bride and husband into a topology for the monk to follow as the bride of the church.

2 See Richard Sennett. *The Craftsman*. (New Haven and London: Yale University Press, 2009).

3 Marbode is the first to provide an organizational structure to a collection of descriptions of magical properties inherent in certain stones. Prior lapidary treatises tend to be simply collections of descriptions. The first systematic treatment of stone was not written until the middle of the thirteenth century when Albertus Magnus wrote his *de mineralibus*, which provided an Aristotelian theory of stone that allowed stones to be ranked according to color and transparency. The clearer and more transparent a stone was, the closer it was to perfect materiality and therefor closer to God. See *Marbode, Marbode of Rennes' De lapidibus: Considered as a Medical Treatise with Text, Commentary, and C. W. King's Translation, Together with Text and Translation of Marbode's Minor Works on Stones*, trans. John M. Riddle (Wiesbaden: Steiner, 1977).

4 Rennes, *Christian Symbolic Lapidary in Prose*, Chapter III, page in 125-126 in Riddle.

5 Rennes, *de lapide*, Chapter XIX, page in 57-58 in Riddle

6 The definitions of the four causes are based on Aristotle's explanation in his *Metaphysics*, book five, section 1013a (Cambridge, MA: Harvard University Press; London, William Heinemann Ltd. 1933, 1989).

7 The medieval understanding of the magnet as the stone most capable of revealing God's presence in the world reaches its culmination in the seventeenth-century treatises on magnetism and stone by the Jesuit, Athanasius Kircher. For Kircher, God was a big magnet, whose power was an invisible light that ordered the cosmos. Albertus Magnus, in his *de mineralibus*, provides the first systematic understanding that points toward *lux*, the invisible light of God, as the top of a material hierarchy that ends in rough and opaque stone.

8 Special stones like miraculous intaglios, the magnet, amber, various precious and semi-precious gems were documented alongside of the twelve stones described in *Exodus* 28:15-28 as decorating the breast plate of the priest. Marbode of Rennes organized these stones according to the exegetical significance, their medical properties, and their medical/magical properties in three different lapidary texts.

9 The two creation myths are in *Genesis* 1:1 to 2:3 and 2:4-24. Hugh's account of the two creations that depended on the medieval understanding of stone is found in the prologue to his major work on the theology, the *de sacramentis*. See Hugh, *de sacramentis*, Book I, Part I, Chapter VI. Bernardus references stone in a similar

manner is his Neo-Platonic epic poem describing creations, the *Cosmographia*. See Bernardus Sylvestris, *Cosmographia*, ed. Peter Dronke (Leiden: E.J. Brill, 1978), Book I, Ch I.

10 Twelfth-century conceptualization of the creations and prime matter were indebted to Calcidius's fourth-century translation of a portion of the *Timaeus*, which included an extensive commentary on *silva*. Calcidius's translation and commentary was an attempt to reconcile Neo-Platonism with his Christian cosmological framework. He did this in part by conflating Aristotelian *hyle* and Platonic *chora*. This allowed the speculation that the first creation in *Genesis* was God's act of bringing a chaotic mess into being that had the potential to be crafted into the cosmos. See Dronke, *The Spell of Calcidius: Platonic Concepts and Images in the Medieval West*, *Millennio Medievale* 74, *Strumenti e studi* n.s. 17. (Firenze and Sismel: Edizioni del Galluzzo, 2008.) See J.C.M. Van Winden, *Calcidius on Matter His Doctrine and Sources: A Chapter in the History of Platonism*. (Leiden: E.J. Brill, 1965.)

11 Hugh describes the ordering of the cosmos in precisely these terms in *de sacramentis*, Book I, Part I, Chapter I.

12 Hugh, *de sacramentis*, Book I, Part I, Chapter VI.

13 Bernardus, *Cosmographia*, Book II, Ch VIII.

14 Ibid.

15 Bernard, *Sermo I. de quinque sacramentis dedicationis*, paragraph 6.

16 Bernard inverts the typical reading of the *Rule of Benedict* in his sermon *On the Steps of Humility and Pride*. In *Steps*, the only path to charity is through the regulating effect of the fear that overcomes pride. Love, in human terms, must first be fear.

17 Ibid.

18 Hugh, *de sacramentis*, Book I, Part I, Chapter III.

19 Bernard makes similar arguments across several of his *sententiae* including 1.18, 1.19 and 1.26 from the *First Series* and 3.53, 3.108 and 3.111 from the *Third Series*.

20 Terryl Kinder has suggested that in later Cistercian architecture, monks would construct masonry walls with nearly perfect joints, plaster over them, and then paint new joint lines. See Kinder. *Cistercian Europe: Architecture of Contemplation*. (Grand Rapids, MI: Wm. B. Eerdmans Publishing Co., 2002), 221. The painting of new joints might have suggested the perfection of the building wall as a source of pride for the builders and inhabitants that required correction to acknowledge earthly limitations and encourage humility.

21 Bernard of Clairvaux, "Sermon 62," *Bernard of Clairvaux on the Song of Songs* in *Cistercian Fathers Series: Number 31*, trans. Kilian Walsh and Irene M. Edmonds (Kalamazoo, Michigan: Cistercian Publications, Inc., 2005), 151.

22 Bernard of Clairvaux, "Sermon 62," 151.

23 Ibid.

24 Ibid.

25 Bernard, *Sermo I. de quinque sacramentis dedicationis*, PL183, Col. 520C.

26 This understanding of the origin of the stone originated, as far as the textual record is concerned, with Theophrastus's *Book on Stones*. It is found in Isidore's *Etymologies* and Pliny's *Natural History*. William of Conches's (1090-ca. 1154) *Dragmaticon Philosophiae* and Hildegard von Bingen (1098-1178CE) *Physica* offer slightly different versions of the same idea.

27 Note that the first descriptions of molten lava of which I am aware can be found in *mundus subterraneus* (1665), Athanasius Kircher, the Jesuit polymath entrusted with the deciphering of Egyptian hieroglyphs by Pope Urban VIII. Liquefaction and solidification as a metaphor for the formation of stone likely derive from alchemical and artisanal practices like the melting of sand to form glass stones as described by Theophilus Presbyter in his books on craft or in the poetic descriptions of Eucharistic transformation in the sermons of Petrus Pictor. For Hildegard's account of the formation of stone, see Priscilla Throop, *Hildegard von Bingen's Physica: The Complete English Translation of Her Classic Work on Health and Healing* (Rochester, Vt.: Healing Arts Press, 1998), 137–38.

28 William describes the process as something that occurred in *Aristotle's Kitchen* a title that would come to designate alchemy and the alchemical laboratory in the thirteenth century. It is within this context that he offers the 'congelation of stone' as the solution to the problem with the Neo-Platonic cycle of the elements described in the *Timaeus*. Note that his solution closely matches Calcidius's understanding of the cycle of the elements in his commentary on *silva*. See Conches, *A Dialogue on Natural Philosophy: dragmaticon philosophiae*, trans. Italo Ronca and Matthew Curr (Notre Dame, Indiana: University of Indiana Press, 1997), Book III, Ch II, Paragraphs I-VI and Book II, Chapter VI, Paragraph II. Also see the notes to the translation by Ronca and Curr, p. 186 notes 1 and 11 and p. 189 note 46.

29 Bernard of Clairvaux, "First Sermon on the Nativity: The Five Fountains," *Bernard of Clairvaux: Sermons for Advent and the Christmas Season*, trans. John Leinenweber et al. (Cistercian Publications, 2007).

30 There was no differentiation between glass, stone and metals or minerals in the twelfth century. See for example, Theophilus Presbyters descriptions of making glass gems not as a deception but as truly making gemstones in his *de diversis artibus*. For an attempt to recover and explain medieval glass making techniques, see Donald Royce-Roll's dissertation on medieval glass. (PhD. Diss., Cornell University, 1998).

31 Bernard, *Sermo I. de quinque sacramentis dedicationis*, PL183, Col. 520C.

32 Ibid.

33 Bernard is borrowing from or making reference to Gregory the Great's *moralia in Job*, which is an early use of the metaphor of a wall made into a single body unified by love. See *Moralium libri* (PL LXXV, 513C).

34 Bernard of Clairvaux, "On Loving God," *Bernard of Clairvaux: Selected Works*, trans. Gillian R. Evans, The Classics of Western Spirituality (New York: Paulist Press, 1987), 196.

35 Bernard was skeptical or at least feigned skepticism about the obtainment of grace. In the retraction that he added to his *Steps of Humility and Pride*, he claims that he was unable to teach others about the ascent undertaken by following the rule of Benedict because he only accomplished the descent through pride. The best state that a monk could hope to reach would be that of an empty vessel waiting for God.

36 John van Engen suggested the relationship between craft and prayer in his "Theophilus Presbyter and Rupert of Deutz: The Manual Arts and Benedictine Theology in the Early Twelfth Century," *Viator* 11 (1980), 147-64. My dissertation focuses on the understanding of craft as a mystical activity that plays a significant role in the origins of Gothic architecture not as a stylistic shift but as a material response to changes in theology and liturgy. See Crow, "The Hierurgy of Stone in Suger's Renovations of Saint-Denis." (PhD diss., McGill University, 2014).

37 Etienne Gilson also makes this observation in *The Mystical Theology of St. Bernard*. For an extended discussion of the complexity of the up and down cycle of Bernard's *Steps* that sees it as being grounded in fear, see M.B. Pranger's *Bernard of Clairvaux and the Shape of Monastic Thought: Broken Dreams*, Ch 3, 85-124.

38 *Benedicti Regula, Caput V De Oboedientia*, line 3.

39 Peter made these comments in his treatise, *On Conscience*, which was written in response to a request by Alcher of Clairvaux roughly fifty years after Bernard's *Steps*. See Peter's of Celle's treatise in Feiss, "On Conscience," *Peter of Celle: Selected Works*, 156-60.

40 Gilson, and Pranger, Ch. 3.

41 Francois Bucher demonstrated the graveness of this shaping and perfecting in his discussion of the mason apprenticeship where he noted that a stone cut incorrectly was buried in a formal ceremony that included the beating of the apprentice who had misshaped it. See his *Architector: The Lodge Books and Sketchbooks of Medieval Architects*, Vol. 1. (New York, NY: Abaris Books, 1979), 12.

42 Michael Stacey, "Digital Craft in the Making of Architecture," in *Manufacturing the Bespoke: Making and Prototyping Architecture*, ed. By Bob Sheil (Chichester, West Sussex: John Wiley & Sons, Ltd., 2012), 58/

43 *Ibid.*, 69-71.

44 *Ibid.*, 73.

45 A good introduction to Flusser's media theory and the impact of technology on culture can be found in Vilem Flusser, *Into the Universe of Technical Images*, trans. by Nancy Ann Roth (Minneapolis and London: University of Minnesota Press, 2011).

[Chapter figure part of "Souvenir Nostalgia Photo Series." Photograph by Andrew Manuel. 2014.]