Sensual Vision: 3-D, Medieval Art, and the Cinematic Imaginary

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Today's moviegoers have the option of watching an effects-driven Hollywood blockbuster in a variety of 2-D and 3-D domestic and theatrical formats, from conventional Blu-ray and 2-D cinemas to 3-D Blu-ray, theatrical Real 3D, Imax 3-D, and even 48-frame rate Imax 3-D.[1] Paying more money for the 3-D experience, audiences are presumably getting more, even if some spectators might be hard pressed to pinpoint the nature of 3-D's special appeal. My two youngest children recently went to a 3-D movie in Brooklyn, and the usher forgot to give them the Real 3D glasses. With mom and dad already ensconced watching another film in an adjacent theater, the oldest went in search of glasses but returned empty handed. When we discovered the oversight at the end of the film and asked them how they had been able to watch the film without the glasses, they informed us that despite being a bit blurry in parts, it wasn't that bad. What this anecdote reveals about my children's fairly low threshold of image quality is less interesting than what the "3-D-without-the-3-D glasses" experience says about contemporary 3-D cinema (Engber 2001).[2] As 3-D releases reach industry standard status, with 3-D sequences scripted to maximize the effect of depth through layering effects and objects flying toward the spectator (Cubitt 2005 43),[3] this is a propitious moment to ask whether certain aspects of the "3-D experience" can be traced to previous art works and modes of spectatorship (Griffiths 2010 163-88).

My argument has less to do with technical features of stereoptical perception (associated with Charles Wheatstone's 1838 discovery of stereopsis, the brain's ability to create an impression of a third dimension as a result of a fusion of images seen slightly differently in the right and left eyes) than in a heightened sensory engagement with images identified with medieval viewing practices. Notwithstanding differences in scale and movement, 3-D cinema and medieval art are by no means unrelated; on the question of how they engage the senses, similarities far outweigh differences. Medieval visual theory helps explain this long fascination with the sensorial plentitude of 3-D in three ways: in both cases, the power ascribed to images, which in relation to 3-D has links to the idea of the screen as a permeable membrane; second, 3-D and medieval image-making as adornment; and third, the tactile quality of 3-D cinema and medieval art, which seems to tease the spectator with the promise of a multi-sensory encounter. The sense of touch, traditionally associated in philosophy and medicine with temperature, is a defining feature of both 3-D cinema and medieval aesthetic objects (Boyle 1988 7). Reaching out and touching images that seem to come alive and enter the viewing space invokes an ancient belief in the importance of the hands in the sensory experience of the world. Advertisements for 3-D Imax depicting spectators with their hands in front of their faces remind us of "speaking reliquaries" from the Middle Ages, life size arms containing bone fragments that were used by clerics to bless congregants (and which congregants strained to reach with their hands). I also draw upon neuroesthetics to juxtapose the study of medieval art production and 3-D film, reminding us that empathetic responses to works of art have a "precise and definable material basis in the brain" (Freedberg and Gallese 2007 197).

Linking cinema to medieval art is not an original idea. As medievalist Bettina Bildhauer observes, several early theorists of film compared silent cinema to medieval art, including Hugo Munsterberg's 1916 *The Photoplay* (Bildhauer 2009 40-59). The connection, what Bildhauer calls a "regeneration of medieval aesthetics," hinges on the assertion that both film and medieval art represent new ways of seeing the world. Silent film theorist Bela Balázs describes it this way: "The many millions of people who sit every night and watch images, *wordless images*...a new language: the long forgotten, now *newly emerging (and indeed international) language of facial expressions*...

Perhaps we are standing on the threshold of a new visual culture" (Balázs 2 in Bildhauer 2009 43, emphasis in original).

I turn first to medieval visual theory to identify just what it is about religious art that, like the return of the repressed, has come back to haunt blockbuster cinema, before examining several examples that offer entry points into the pre-history of 3-D.[4] Analysis of a commercial for a Fujifilm FinePix 3-D camera bridges the gap between the pre-modern and contemporary visual landscape and draws into sharper focus some of the enduring tropes found in cross-platform 3-D representation. At the same time, it is important to keep in mind that the traditional terms of illusionism, realism, and similitude are not especially helpful in making sense of medieval art, where the "concepts of authorship, textuality, and audience relationships to texts and authors were quite different from our own" (Suydam 1999 196). Addressing these radically disjunct time periods and artistic practices calls for a more catholic understanding of how three dimensional image-making can entrance the senses and engage practices of belief, both religious and secular.

Corporeal Vision: The 3D Effect

> Cinema's first effect is to exist. Yet like everything else it has trouble existing, and the effects it produces – images and sounds, *dimensions*, durations, sensations, and understandings, and thoughts – all share a quizzical and oblique relationship to reality (Cubitt 2005 1, emphasis added).

Cinema is not the only artistic medium that has trouble existing, and not just phenomenologically, but in relation to issues of censorship and governance (see Grieveson 2005). Medieval image making could also be disruptive, and shares a phenomenological affinity with 3-D motion pictures, since they both cue an embodied mode of seeing, intriguing if not overwhelming the senses of the beholder. Seeing was immensely corporeal in the Middle Ages, and based on St. Augustine of Hippo's theory of vision, the first level of vision, corporeal, occurred when "one sees the incorporeal through natural optical perception" (354-430). Spiritual or imaginative vision comprised the second level, and intellectual vision the third, where one had a "direct sight of incorporeal beings and the Divine truths" (Laugerud 2007 175). Ideas of perception were socially determined,

with a lively communication between corporeal and non-corporeal ways of perceiving (see Stevenson 2012 20-23). The issue of what images are saying (and by extension, what they want, questions taken up by W.J.T. Mitchell) is central, since knowledge about the world in the Middle Ages came primarily from visual sources (Mitchell 2005 6).[5] Notions of the eyes as lustful, open to sensation, and therefore dangerous prevailed. Religious objects were perceived to have special powers, with relics becoming animated or undergoing metamorphosis. As Caroline Walker Bynum writes in *Christian Materiality*, images could "change color, weep, bleed, or walk in order to rekindle devotion or protest neglect" (Bynum 2011 21-22). Just as today's 3-D film spectators have heightened expectations about how the image will act upon them (and heightened anticipation about how they will respond), so too did perceiving subjects in the Middle Ages. As intromission (visual rays emanating from objects to the eye) replaced extramission (rays of light from the object to the eye), the idea of "sight functioning as access to the divine" took on new meaning (Hahn 2000 170; see Camille, 2000 204-08). Religious art created during this period explicitly recognized this model of vision, so much so that "the hypersensitivity of the perceiving subject to every bleeding gash and open orifice in God's body was built on a radical openness to exterior sensations and became crucial forms of mystical devotion" (Camille 2000 207).

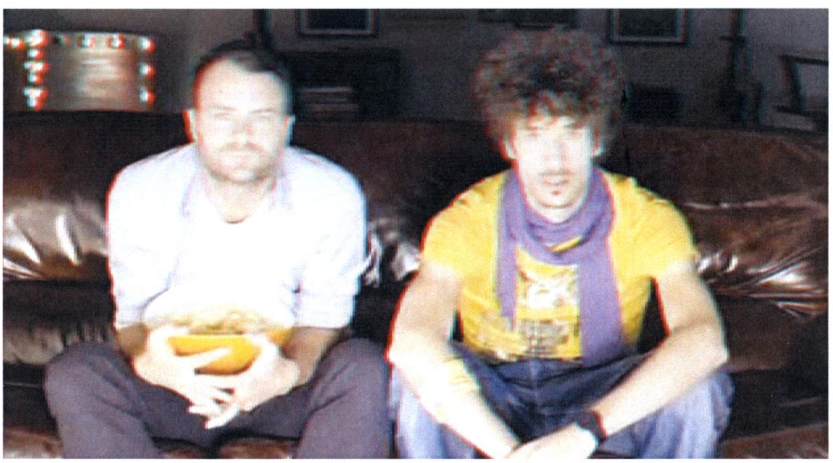

Fig. 1 Frame grab from Fujifilm's FinePix 3D W3 camera commercial showing the two male subjects staring in wonderment at the screen, the second before they enter the image and find themselves inside their friend's vacation pictures.

This openness to sensation provides a bridge across medieval religious art and contemporary 3-D cinema, for at the nexus of the 3-D experience is a set of assumptions about vision and embodiment, of being affected in a way that exceeds two-dimensional film (Stevenson 2006 207; see Griffiths, 2006 3-39).[6] Medievalist Susannah Biernoff argues that optics was both a field of study and a key to unlocking the natural world, and reminds us that the verb *perspicere*, which means to survey or scrutinize, gave the viewer the power to see through, almost like an x-ray (Biernoff 2005 41). This definition has particular applicability to a recent commercial for Fujifilm's FinePix 3D W3 camera, in which two male viewers, initially dreading the boring prospect of seeing their friend's vacation pictures on his flat screen TV, enter into a state of reverie when they are bathed in light from the TV, what I have previously called the "revered gaze," a rapturous reaction shot used to market expanded or hyperreal media platforms and ubiquitous in medieval art (Griffiths 2008 15-36).[7] (Fig. 1). Seeing through is taken one step further in this ad, as sight triggers an ability to physically enter an image, a visual trope found in countless ads for new media delivery platforms and high definition home theater systems when the space between screen and armchair viewer is collapsed (see Boddy 2004) and the reverse of the 1940 film *Magic in the Air,* in which a woman's hands emerge out of the screen toward the spectator, a 3D convention I discuss below.

The conceit of the viewer virtually entering the image, of being placed inside the *mise-en-scene*, is by no means new; for example, the artist's physical immersion in the image played a significant role in the *Salon de 1767*, especially in the work of landscape and marine painter Joseph Vernet (1714-1789). Michael Fried explains it as not simply being able to see a landscape through the artist's eyes but "also to visualize his presence at the scene, a very different thing" (Fried 1980 21-22). The Fujifilm commercial takes this idea one step further by giving the spectator virtual access to the image, a ploy that illustrates the sensory impact of 3-D representation upon the body, the ad's play on the Aristotelian principle of sensation being a "qualitative alteration," a point Biernoff makes in her argument that perceiving and sensing is all about being materially altered, something Aristotle implicitly recognized. But the men's sense of wonder derives not only from the dissolubility of the living room and the 3-D image, but from their realization that the ad's diegesis is frozen in time and that they are the only things imbued with life.

Fig. 2 Frame grab from Fujifilm's FinePix 3D W3 camera commercial showing the stasis of the 3D world. A water bubble floats in the frame, frozen in time.

The Fujifilm ad could serve as a poster child for recent research on perception in cognitive science, which medievalist Jill Stevenson argues "has profoundly influenced conceptualizations of embodiment and…challenged the Cartesian mind/body separation — a postmedieval rupture — by replacing the dualistic person with an inherently embodied mind whose reasoning processes are shaped by the body" (Stevenson 2010 20). 3-D is felt in the Fujifilm ad as opposed to being seen, illustrated in the shot when one of the men touches the frozen water bubbles (Fig. 2). The haptic quality of the shot is a direct nod to 4-D cinema, where somatic intrusions from the auditorium (often in the form of water, bubbles or other dissolvable matter falling from above the spectator's heads) ramp up the reality effect and collapse boundaries between filmic image and viewing space (see Marks 2000). Regarding the permeability of the screen, Michael Camille calls the disruptive logic of visual arts from the medieval period "*holes of representation*, pockets of pictorial narrative" that he argues detract attention away from the verbal hierarchy of illustrated manuscripts (Camille 1985 138, emphasis added). The representational hole conjures up the image of 3-D objects pushing through the 2-D screen toward the space of the spectator; it also renders the movie screen a permeable, tactile membrane, explored by video artists and theorized by Guiliana Bruno (Bruno 2013). This image of the leaky screen is literalized in the 4-D Niagara Falls film *Niagara's Fury: The Creation of the Falls*, where spectators wearing the same brightly colored protective ponchos they don on the tour boat Maid of the Mist,

are doused with water that seems to come out of the screen toward them as they stand in the domed viewing space.

But 4-D cinema has a fascinating history beyond its obvious antecedents in the midway exhibit and funfair thrill ride. For example, the fourteenth-century castle of Hesdin immersed spectators in a space filled with automata uncannily similar to a contemporary Universal Studio thrill ride or 4-D museum or tourist site movie. According to a mid nineteenth-century account, upon entering a gallery visitors encountered "a machine for wetting ladies when they step on it, and a mirror in which one sees many deceptions.... and an 'engine' which, when its knobs are touched, strikes in the face of those who are underneath and covers them with black or white." Two wooden figures also spoke to those who dared enter, a hermit and a "personage of wood that appears above the bench in the middle of the gallery and fools people and speaks by tricks" (Camille 1989 248).

Another way of addressing the complexity of meanings circulating in the FinePix 3-D ad is by recourse to medieval visual theory, since the ad vividly illustrates the idea of the physical effect of 3-D images upon the spectator, a Franciscan notion of sight (both ordinary and miraculous) as a form of physical *interaction*. Sight and the other senses are intricately bound in this ad; rather than simply see the effects of 3-D photography from the comfort of the armchair, the men are sensorially immersed in them. 3-D is sold in this ad as a participatory and physically transformative experience. Sight provokes physical change, taking the men out of one diegetic space and time and into another. This perfectly illustrates the Aristotelian principle of *seeing* as *feeling*, "a physical 'touch,' a sensation of pleasure and pain, an emotion 'expressed in matter'" (Aristotle 1984 cited in Biernoff 2002 97). Devotional texts and spiritual exercises from the Middle Ages invited a similarly participatory encounter, inviting spectators to respond ritually to narratives of Jesus' life (Hodapp 1999 251).

Medieval spectators were also invited to project themselves into the image, not unlike our Fujifilm FinePix men, since sight in the Middle Ages, as Cynthia Hahn argues, signified access to the divine, although other "acts of faith," including prayer, touch, and bodily prostration, seemed to raise the likelihood of a divine vision (Hahn 2000 170 181). John Dagenias calls this an ethics of reading (by ethics he means practices) in which the text actualizes behavior on the part of the reader, absorbing them into its ethical system and stimulating

its own reenactment (Dagenias 1994 21 cited in Turner and Turner 1995 180). Devotional viewing practices from the Middle Ages and contemporary 3-D marketing like the Fujifilm ad share this sense of in-betweeness that can be triggered by an individual's physical and mental acts or mere presence, a religious space like a cathedral (in the case of medieval art), or by the liminal quality of 3-D's heightened sense of presence (in the case of cinema). The famous Abbot Suger of St. Denis in France described the disorienting sensation of this neither-here-nor-there sensation, a condition our two men[8] in the Fujifilm ad seem to experience as they bring the sofa with them on their journey into their friend's New York City photographs:

> I see myself dwelling, as it were, in some strange region of the universe which neither exists entirely in the slime of the earth nor entirely in the purity of Heaven; and that by the Grace of God, I can be transported from this inferior to that higher world in an anagogical manner (Suger in Panovsky 1970 149).

Rapturous religious experiences and 3-D are linked by their shared liminality and immanence, a dissolution of space and mental boundaries separating the earthly from the unearthly.

Medieval Objects: 3-D as Adornment

The idea of adornment to enhance the viewing experience provides another means of forging a connection between medieval image making and contemporary 3-D cinema. 3-D as adornment, as an enhanced viewing experience, is a distinct marketing trope of 3-D. Adornment, defined as something that "beautifies," as in an object worn to "embellish, enhance, or distinguish," is a useful metaphor for understanding the differences between standard format film releases and their "adorned" 3-D counterparts (http://en.wikipedia.org/wiki/Adornment). In the Middle Ages, gold and precious gems were used not only to adorn artistic objects but valued for their protective and healing powers, as in wearing a ring to ward off evil or illness (gold, crystals and copper still have this association) (Leopardi 2012 and 2011). These objects included vibrant sculptures, which, as Bynum Walker argues, used the jewels to announce their power (Bynum 2011 20). Material that could be added to objects, such as parchment, gold leaf, brocade, leather, and vermilion paint, adorned religious objects and not only made them visually attractive, but also induced a

prescribed response and supported doctrinal principles (Bynum 2011 22). On a very basic level, both 3-D cinema and adorned medieval art induce sensorially enhanced modes of spectatorship, through envisioning depth, immersion, and movement out of the frame in the case of cinema, and "bringing to life" in the case of devotion artwork or books of hours (private prayer books) which open to reveal spectacular interiors or trigger ritualized practices of faith.

Fig. 3 Passion altar from Cloister Ihlow, Flemish, Antwerp, ca. 1510-15 showing the altar in open form. The gilded crucifixion in the center provides a three-dimensional visual spectacle. Photo Niedersächsisches Landesmuseum, Landesgalerie, Hannover.

A powerful example of 3-D as adornment can be found in the Ihlower winged altar from the Cistercian cloister in St. Lambert's Church, Aurich, in Frisia, showing the famous Mass of St. Gregory depicting (see Bynum 2011 66) (Fig. 3). Completed between 1510 and 1515, and representing both the mass of St. Gregory, in which a vision of Christ appeared to Pope Gregory at the moment of consecration, and the Passion, the altarpiece can be viewed either open or closed. In its closed state, the altarpiece consists of five vertical painted panels: the two center ones depict the mass, although the crucifixion painted in the center is eclipsed by the decorative border that hides Christ's body, revealing only his outstretched arms. Directly above the crucifixion are two smaller panels: on the right, an image of the Man of Sorrows,

and to the left, an angel holding the Veil of Veronica. When opened, the altar reveals a series of different sized "death in the round" scenes of the Passion, framed by ornate gold leaf and offering a "more tactile, material scene" that glorifies Christ's death in the "most immortal of substances, gold" (Bynum 2011 67).

The Ihlower altarpiece takes the spectator through many of the same stages as the Fujifilm FinePix 3-D camera ad. Even its content, St. Gregory's vision, is phenomenologically tied to cinema, since a vision (like a projected moving image) is phantasmagorical rather than material. But, as Bynum notes, the fact that no-one in the central panel representing St. Gregory's vision can actually see Christ's vision undermines its role in authenticating the phenomena of visionary experience, and yet the missing body of Christ from the closed panel implicitly draws the viewer into the image and what lies beyond or beneath. But rather than eclipse the vision, one could argue that the outer panel hints at the complex ontology of visions suggesting that what lies beneath the folded panels is not only more materially complex, but is the missing referent for St. Gregory's vision (Christ's Passion). Viewers might have understood that the altarpiece's ability to transform when opened up on special religious days was the reason why they could not see Christ's body on the cross; the missing body was a vital clue of the altarpiece's transformativity (Bynum 2011 67). Inside the opened doors, the exquisite depth of the carved vignettes in the Passion tableaux (including people standing in front of one another and the folds in their clothing), the representation of the stages of the cross, and the striking contrast to the adjacent painted panels combine to celebrate the inner parts of the altarpiece as a hypersensual and embodied viewing experience. Biernoff casts the sensation of viewing such objects as a melding of matter, the inanimate objects becoming a part of the sentient viewing subject: "when we perceive something, that thing in a very real way becomes part of us: the essence of the thing is drawn forth from the object…and impregnates the receptive matter of our sense organs and mind" (Biernoff 2002 72 cited in Stevenson 2010 26).

But what else about the 3-D qualities of this altarpiece sheds light on our understanding of 3-D cinema? The opening up of the hinged side panels that takes us from a 2-D to a 3-D experience suggests the longevity of visual practices that play precisely on the sensory

and haptic pleasure of adding depth to an image. Another example can be seen in a late thirteenth/early fourteenth century devotional object of a Virgin Mary housed at New York's Metropolitan Museum of Art, which, when opened, reveals the Trinity inside, although the dove and crucified body are no longer attached (Fig. 4 & 5). Bynum points out that the idea of Mary as a container is doubly signified in this statue, since she is both a tabernacle housing Jesus and a space where consecrated hosts are sometimes stored (Bynum 2011 86-7). The statue of Mary opens and closes just like a winged altarpiece, thus animating the statue, since the nursing Mary in the closed version gives no hint, save for the vertical line running from her neck to her feet, that something else lies within (given that opening Mary statues were not uncommon during the Middle Ages, spectators may have suspected something). There is a fascinating play between body and object in this statue. As Mary opens up to reveal God, the animation prepares us for the interior 3-D splendor of God seated holding onto a cross. Mary's body gives the sculpture additional depth and the smaller scenes to the right and left play up differences in somatic representation between the flat images painted on the inside of her hinged gown and God's more three-dimensional body. The pleasure and no small sense of wonder in seeing God hidden in Mary's body surely has corollaries in pop-up story books, philosophical toys, 3-D cinema, and—especially—digital media environments, where what you initially see is not what you get until you click and enter into something entirely different.

Fig. 4 Devotional object from late thirteenth or early fourteenth century showing in closed form a nursing Virgin Mary. The Metropolitan Museum of Art, gift of J. Pierpont Morgan, 1917. Image copyright The Metropolitan Museum of Art. Image source: Art Resource, NY.

Fig. 5 Devotional object of Virgin Mary, ca. 1300 in open position revealing the Trinity. A three dimensional representation of God is housed inside a three dimensional Virgin Mary, who becomes a literal vessel. Image copyright The Metropolitan Museum of Art. Image source: Art Resource, NY.

And cinema performs a similar perceptual game with 3-D effects, using them to shore up the somaticized nature of the viewing experience, as when we raise our hands to protect our face from virtual objects flying out of the screen. A more spiritual rendition of the space annealing powers of 3-D can be seen in *Avatar* (James Cameron, 2009) when Tree Sprites, seeds from the Tree of Souls that represent Eywa, float out into the space of the theater and cover Jake Sully, the film's hero. And in the "I See the Light" duet sung by Rapunzel and Flynn Rider in Disney's *Tangled* (Nathan Greno and Byron Howard, 2010), thousands of lanterns float up into the air and out of the screen toward the spectator.

III. Arm Reliquaries, Touch, and the Senses

The sensation of touch is an indelible part of 3-D cinema and medieval objects (Boyle 1998 7). Touching, especially feeling one's way around in the dark, was part of the lived experience of most medieval people who in winter had to perform many daily functions in little to no light. Living in what Constance Classen calls a "tactile cosmology," medieval society engaged in all manner of communal touching in private as well as public spaces such as baths (Classen 2012 11 & xiii). In less prosaic contexts, reaching out and touching images that seem to come alive and enter the viewing space in 3-D cinema betrays an ancient belief in the significance of the hands. The hand of God was capable of "speaking," a gesture echoed in the touching gesture of the Creator in Michelangelo's Sistine Chapel fresco, and, as Marjorie O'Rourke Boyle argues, in the idea of hands as the "organ of organs." Hands, Boyle explains, "substituted for other bodily parts: for the eyes in the groping of the blind, for the tongue in the signs of the mute" (Boyle 1998 24). Advertisements for 3-D Imax technology often show spectators seated in steeply raked auditoriums with their hands in front of their faces or reaching out in front of them, and it is not uncommon to see spectators attempt to touch objects when watching an especially thrilling 3-D sequence (Fig. 6). These gestures, bizarre even in the context of a movie theater, were thought to signify mental instability, at least for Dutch Renaissance humanist Desiderius, and "odd gestures—like waving the hands—in front of the face or grabbing the air" had, since the Hippocratic writings, "been observed as symptoms of disease or even of death" (Erasmus 1703-06 1040 cited in Boyle 1998 24; Hippocrates 1839-61

cited in Boyle 1998 24). That the visual content of certain images can trigger such an embodied response is intriguing, a phenomenon taken up by researchers in the field of neuroesthetics, who are interested in understanding why "beholders might find themselves automatically simulating the emotional expression, the movement or even the implied movement within the representation" (Freedberg & Gallese 2007 197).

David Freedberg and Vittorio Gallese's theory of empathetic responses to works of art is not only helpful for explaining the gestural behavior of 3-D cinema spectators, but helps situate both medieval image consumption and 3-D film within a long history of haptic images that provoke such responses. Their account of empathetic response can help explain why spectators might reach out their hands to touch objects they know are not really there. According to Freedberg and Gallese, empathetic response is not "purely introspective, intuitive or metaphysical but has a precise and definable material basis in the brain." In their words, "when we see two objects touching each other, our somatosensory cortices are activated as if our body were subject to tactile simulation" (Freedberg & Gallese 2007 199 & 201). A spectator reaching out to touch the image when watching 3-D films is thus a good example of matching motor representation of witnessed actions, since the spectator acts upon the feeling by actually reaching for the imaginary object.

The sensation of objects coming out of the screen or artwork toward us, in a gesture Bynum sees as both affirming the "thingness" of the representation (often by drawing attention to its adorned state or what it is made out of) as well as transcending it through reference to the spiritual, is nowhere more keenly felt than in reliquary-monstrances, "receptacles that reveal through crystal windows or disks the cloth or body fragment within" (Bynum 2011 70). And certain kinds of reliquaries, those that mimicked the shape of the body part contained within—called "speaking reliquaries" by German historians—are the most interesting for the purposes of this investigation, especially arm reliquaries, which for obvious reasons, share a connection to the outstretched arms in Imax ads (Fig. 7). Along with other veristic body-part art works, such as AD 1-800 Peruvian head vessels, that Jeffrey Quilter argues serve as "technologies of enchantment by momentarily convincing viewers that they are looking at a living person," the hyper-real arm reliquary is also invested with social agency, performing

different roles depending on the context of their display (Quilter 2007 138). Reliquaries belong to categories of religious objects that appeal directly to spectators' emotions, and that exploit the rhetorical power of visual images to move the viewer to piety. Reliquaries, Christ's Passion, and the Veronica-cloth are excellent examples of devotional images that invited responses grounded in epistemological principles of faith from the Middle Ages (see Scribner 1989 448-69).

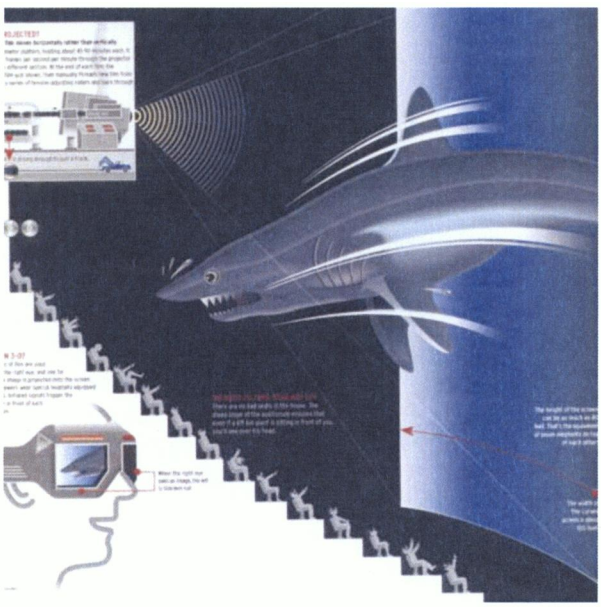

Fig. 6 "Inside an IMAX Theater" publicity material showing spectators with hands out in front of them as a shark penetrates the screen into the space of the auditorium.

Reliquaries, like motion pictures, are indexical,[9] insofar as they contain traces of bodies that once existed but now appear in partial or trace form only (see Hahn 2010 284-316; Hahn 2012; Bynum 2011 131-76; Bagnoli et al. 2010). The reliquary, sometimes, but not always, resembles the body part it contains, although arm and foot reliquaries, as Cynthia Hahn and Anton Legner explain, do not always contain what they signify. Both the reliquary and cinema play on the idea of the signifier standing in for the missing body (a bone fragment for the bodily saint; a star's close-up for the flesh and blood actor). Many reliquaries contain a crystal window through which the relic, often a tiny shard of bone or bodily matter such as dried

blood, can be viewed. Cinema is metaphorically like the speaking arm reliquary because it too trades on a similarly uncanny relationship to the missing referent and transcends the absent "whole" body through a heightening of presence and, it may be argued, an uncanny relationship to the real through this sensation of doubling, something Leslie Stern refers to as "the instability and fragility of presence, the discontinuity of the body" (Stern 1998; Freud 1919). The reliquary and the cinematic image both stand in for absent bodies, although the materiality of the relic itself arguably evokes a more powerful sense of the uncanny than the chimerical motion picture. According to Bynum, this is the only way that the transient body can be made "permanent and transcendent" (Bynum 2011 70 & 79; see Bazin, 1967).

Like cinema, the reliquary does not represent full presence but effectively points to or "*indicate*[s] the real and the present because it gives evidence of one-time contact or somehow maintains an adjacency to that which it represents" (Hahn 2011 13). Dismemberment and body resemblance have an unsettling effect on the spectator in both cinema and the body part reliquary, imbuing both with something of a supernatural quality, something not lost on Russian literary powerhouse Maxim Gorky upon first viewing cinema in 1896 (Gorky 1896). This sense of a missing referent and luring of the spectator closer to the represented is, as Hahn argues, "complexly 'metaphorical' and 'relational'" (Hahn 2011 14). The arm reliquary's uncanny lifelike quality, its realistic scale and sheathing of the arm in gilded silver, remind us of its materiality and of the unsettling knowledge that beyond the trace of the body seen through the crystal viewing window, bodily matter may also be present in other parts of the arm. Let us remember too, that a saint's body was not a lifeless corpse but as Classen reminds us, a supernatural force that "had the power to grant good health, good fortune, and a good end—all through the medium of a touch" (Classen 2012 40). Hahn's argument about the relic calling upon the viewer to "complete the imaginative 'whole'" through inviting a response and interaction, seems as apt a description of cinema as of the reliquary, although the 'whole' in cinema relates more to identification within a fictional diegesis than the theological meanings triggered by looking, or, more often, touching a relic" (Hahn 2011 15).

The fragmentation of the human body binds cinema to the reliquary in interesting ways, since in both, the body is cut up, the part standing for the whole, and there's an invitation to touch. This is vividly illustrated in one of the earliest reliquaries ever made in the form of a body-part, the arm reliquary of St. Basil from the treasury of Essen

Cathedral, Germany, created in the eleventh century and supposedly containing the relic of Basil of Caesarea. The liturgical glove covering the arm that indicates the saint's episcopal rank is gathered in layers on the forearm, providing a striking contrast to the textured grain of the metal hand, which gives it a wrinkled appearance. The hand, with fingers pointing upwards in a relaxed gesture, begs to be picked up and touched, and not surprisingly, this is precisely how it was used, as a ritual object to perform blessings and offer healing.

Fig. 7 Hyper-real French Arm reliquary, fifteenth century, representing the right arm of St. Fiacre performing a blessing. Wear on the arm suggests the active use of this reliquary. Silver, silver-gilt, glass, and rock crystal cabochons over wood core. Gift of J. Pierpont Morgan, 1917. Image copyright The Metropolitan Museum of Art. Image source: Art Resource, NY.

The fifteenth century silver and silver-gilt arm of St. Fiacre performing a blessing (index and middle finger pointing while other fingers lay flat down) owned by the Metropolitan Museum of Art and exhibited in the "Objects of Desire" exhibition at Hunter College Art Gallery is another striking example of the speaking reliquary

(Fig. 7). According to Maggie A. Norville, one of the exhibition's curators, not only were such objects used to make the sign of the cross during ceremonies, but they were also used to reach out and touch the faithful during a religious service or special day, as St. Fiacre himself did when he was alive. Born in Ireland toward the end of the sixth century, St. Fiacre was a renowned healer and "wonder-worker" who developed a large following by laying his hands on the afflicted and curing all manner of ailments. The arm reliquary in this instance is more than a metaphor for embalmment (André Bazin's famous evocation of cinema) but an object that reanimates St. Fiacre's powers of healing (Bazin 1967 9-16). As Norville explains: "The Divine worked through St. Fiacre's body to perform miracles of healing and blessing during his life, and so through this reliquary and the relics housed within, the saint continues his wonder-working, laying on his right hand and calling upon the power of Heaven" (Norville 2011 36). The arm reliquary's revivification, its movement toward members of the congregants who would kiss its fingers, evokes the sensation of objects moving out of the screen into the viewing space in 3-D cinema. Dead yet alive, earthly yet transcendent, the effect of the arm reliquary moving in space above the heads of the congregants must have been spectacular, to say the least. Moreover, the visual effect of the priest holding this dismembered limb that becomes his own third arm during the blessing elevates the experience to near mystical (even supernatural) proportions, as it appears that the arm of the dead saint is suspended in an interstitial space where it is neither dead nor alive. It is also an example of what art historian Liliana Leopoldi, referring to the use and conception of ornament in fifteenth century Italy, calls a "rupture with the mundane that is a vital part of any successful *performative* ritual," an evocative description of the reason we go to the cinema if ever there was one (Leopardi 2011 256).

The idea of a dismembered arm that looks very much like an animated reliquary is playfully explored in Gaumont's macabre short *The Thieving Hand* (1908) directed by J. Stuart Blackton, in which an amputee is fitted with an artificial arm in a prosthetics shop. The wind-up arm has a kleptomaniacal mind of it own, filching objects from passersby and causing its new owner much embarrassment. Exasperated, the man pawns the arm in order to be free of the nightmarish limb. Placed in the pawnbroker's display window, the arm continues its antics, landing the amputee in jail in the final scene when he rejects the arm for a second time and it attaches itself to an armless

convict, a recipient nonplussed by its criminal proclivities (possibly its original owner). If not illustrative of the 3-D effect, *The Thieving Hand* nevertheless shores up the phantasmatic excesses of the dismembered arm, which, like the head, seems invested with agency. This trick film leverages some of its meaning from the medieval reliquary, where the fantasy of revivification always threatens to disrupt the arm's pious stasis.

Conclusion: Enduring 3-D Pleasures

Despite encroachment from home 3-D television receivers, 3-D Imax on a giant screen comes closest to how we might imagine medieval men and women felt when they entered cathedrals, gazed upon or interacted with ornate devotional objects, or came into contact with a reliquary. And if religious faith seems like an unlikely concept to evoke in discussions of contemporary 3-D cinema, a 2012 Imax advertising campaign underscores the connection. The $5 million campaign replaced the "Experience it in Imax" tagline with the more epistemological or metaphysical "Imax is believing" (a riff on "seeing is believing"). *New York Times* advertising columnist Stuart Elliott argued that this shift was about "urging people to watch an Imax large-format movie for emotional rather than rational reasons" (Elliot 2012). Medieval visual theory's idea of sight as a trigger for faith is imported wholesale into this re-branding campaign: "Prepare to Believe. Watch a movie or be part of one…IMAX has nothing to do with seeing a movie and everything to do with believing in one" (http://imaxisbelieving.com/). The "Imax is Believing" promotional video consists of Imax spectators testifying to the reality effect of Imax cinema—they are interviewed in movie theater lobbies, presumably to underscore the veracity and spontaneity of their response—and rhapsodize about the immersive qualities of the film (several refer to "the edge of their seats" quality of the experience). Cinema's indexicality plays no small part in this, although sound is equally important in heightening the illusionism.

The resonances I have identified across medieval art and 3-D cinema in this essay are less about the hyper-real—complicated in the case of 3-D where actors often resemble cardboard cut-outs, appearing flat instead of fleshy—than about the power of images to affect us in memorable, spiritual, disquieting, or discombobulating ways. And if the actual responses of historical viewers to the rich visual culture of the Middle Ages are elusive, informing contexts such as patronage, word-image relationships, prohibitions against looking, visions, and

reliquaries shed light on the behavior of beholders and their interaction with visual culture. Finding connections across these disparate art forms has been an exercise in not simply identifying how three-dimensionality was inscribed in different art objects and visual styles, but thinking about "response" in a more expansive way, as Freedberg suggests, not only about what beholders do and how they respond to the world in represented form, but also "what images appear to do... and what [beholders] expect imaged form to achieve, and why they have such expectations at all" (Freedberg 1991 xxii).

In our image saturated twenty-first century, 3-D protocols can take us out of the mundane and into the realm of the pseudo-spiritual. 3-D images may not be as codified in terms of the ritualized practices associated with medieval altarpieces, devotional objects, or reliquaries, but they nevertheless are capable of triggering states of reverie, sublimity, or existential musings on our place in the universe, sensations that bind us emotionally to our medieval ancestors, even if their investments were devoutly Christian. Their faith in the power of images to come alive, drive away demons, perform miracles, or serve as a conduit for the Holy Spirit, is clearly not the same kind of "faith" that is touted in Imax's "Believing" campaign. But it is not that different. Irrespective of their associated belief systems, 3-D objects across both eras trigger recognition of the sensory superlativeness of the 3-D image. And given that looking is never isomorphic with seeing (the former culturally determined, the latter biological), medieval visual images complicate the adage that what you see is what you get. In fact, what most unites medieval image theory with today's 3-D Imax releases is an obdurate belief in the visual and sensory logic of 3-D as sensual, reflexive, and spiritual. Even royalty are getting in on the act, with Queen Elizabeth II delivering her 2012 televised Christmas Day message to British and Commonwealth subjects for the first time in 3-D.[10] This might be considered another example of 3-D as adornment, evidence of Buckingham Palace being hip to the image-enhanced times. But as I have shown here, there is a much longer, more complex history of 3-D being used to adorn the spectatorial experience, to function as an additive, a sweetener if you like, that coats the eye and the senses, not always pleasing everyone, but calling attention nevertheless to the representation as exceeding expectations and delivering more rather than less.

Notes

[1] My thanks to William Boddy, Maggie Henenfeld, my research assistant June Julotai, Liliana Leopoldi, and Kristen Whissel for assistance with this essay.

[2] The Motion Picture Association of American reported that 47 3-D movies were released in 2011, but box office receipts were down 18%. See. See http://www.slate.com/articles/health_and_science/science/2011/09/who_killed_3d.single.html for a discussion of the challenges facing 3-D cinema in the wake of blockbusters such as *Avatar*, *Alice in Wonderland, How to Train Your Dragon, Shrek Forever After,* and *Toy-Story 3*.

[3] Sean Cubitt calls Méliès the "first master of the cinematic third dimension" as a result of his layering of space in many of his films (Cubitt 2005 43).

[4] Methodologically, this essay shares an affinity with a media archaeology that examines relations between media across time (see Hollander 1991; Huhtamo and Parikka 2011; Zielinski 2008; Kittler 2010; Gitelman 2004; Marks 2010; Ndalianis 2005; Griffiths 2008) while taking inspiration from David Freedberg's seminal *The Power of Images* (Freedberg 1991). Within medieval visual studies, I am indebted to the work of Susannah Biernoff, Michael Camille, Cynthia Hahn, Jeffrey Hamburger, David Morgan, Catherine Bynum Walker, Pamela Sheingorn, and Jill Stevenson, who not only establish connections between the pre-and post-modern, but have helped make medieval visual studies an innovative and theoretically ground-breaking interdisciplinary field (Gertsman and Stevenson 2012 1-10). Tracing the *longue durée* of 3-D as a way of representing the world, this essay also builds upon Mieke Bal's idea of a work of art's pre-text, its deep informing context as opposed to its "immediate…and visual milieu" (Bal 1991 189 in Emmerson 1999 250). This essay resonates most with Laura Mark's book, in which she argues that Islamic art and philosophy are deep sources of our contemporary information culture and new media art. Marks traces a broad continuity that is "more than analogy …[since] the Islamic quality of modern and new media art is also a latent, or deeply enfolded, historical inheritance from Islamic art and thought" (Marks 2010 1 & 5).

[5] I take methodological inspiration here from Mitchell's interest in looking at "the varieties of animation or vitality that are attributed to images, the agency, motivation, autonomy, aura, fecundity, or other symptoms that make pictures into 'vital signs,' by which I mean not merely signs *for* living things, but signs *as* living things" (Mitchell 2005 6).

[6] This is not to suggest that 2-D film cannot induce a similarly "bodied similarity between actors and audience," as Jill Stevenson points out in her discussion of Mel Gibson's extensive use of close-ups and slow motion in *The Passion of the Christ* (Mel Gibson, 2006). (Stevenson 2006 207).

[7] The ad is viewable on YouTube: http://www.youtube.com/watch?v=GYemEEGXC78

[8] The inscription of gender within contemporary media technology ads, especially those for 3-D, high-definition platforms, and information devices, which associate enhanced vision with men, contrast with the power of the visual in the Middle Ages, when, as Camille argues in *Images on the Edge*, women were linked to the "dangers of excess" and "artifices of representation" (Camille *Gothic Idol* 117). As othered groups, women and children were perceived to be especially vulnerable to the power of the image, and pregnant women were in a category all their own, both at risk for causing harm to their unborn child if they looked at the wrong kinds of images, and themselves visual objects of anxiety and contempt (St. Jerome, for example, referred to a pregnant woman as a "revolting spectacle"). The protruding shape of a pregnant woman's belly transforms the body into a (temporary) visual effect that skirts the edges of the monstrous and the grotesque. Menstruation – the menstrual eye as a source of infection, a symptom of "the inherently unstable, leaky, and therefore dangerous female body," was but one manifestation of paradoxical ideas about the eye, "penetrating but apt to be penetrated." Indeed, a menstruating woman's eye, capable of projecting a red strain on a reflective surface such as a mirror, shares qualities with the motion picture projector. Biernoff argues that by the fifteenth century, the idea of ocular menstruation was fairly widespread, "based on the principle that the eyes, as especially porous organs, receive any overflow of accumulated menses" (Biernoff 2002 52).

[9] Although I am aware that indexicality as a concept is troubled by the digital – D.N. Rodowick's argument that "indexicality is no longer the

measure of truth of the image. The figural enonce is virtual; it does not necessarily derive from any prior existence" sums up the objection – the index is still relevant in medieval visual theory, and arguably a viable concept for explaining ways of seeing, irrespective of its mode of production (Rodowick 1990 24 cited in Mulvey 2000 140).

[10] See http://www.ibtimes.co.uk/articles/418208/20121225/queen-3d-christmas-message-olympics-jubilee-buckingham.htm accessed 12/27/12.

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