Introduction: Can't Touch This

> This embracing or kissing the image visually, I submit, was meant literally as well as metaphorically. Like all successful religious symbolism, this metaphor was grounded in perception and perceptual theory. Because the optical rays that issue forth from the eyes were thought to touch the object seen, vision was haptic, as well as optic, tactile as well as visual. Vision thus connected one with the object seen, and, according to extramission, that action was initiated by the viewer.[1]
>
> – Robert S. Nelson

In 2000, Robert S. Nelson's groundbreaking essay "To Say and to See: Ekphrasis and Vision in Byzantium" raised the theory of haptic sight to a privileged position in the history of Byzantine art and culture. Positioning extramission (where the eye emits rays that contact the object) against intromission (where rays enter the eye passively from an outside source), Nelson argued for a theory of vision wherein sight was a species of touch.[2] Despite acknowledging that competing antique and late antique theories

[1] Robert S. Nelson, "To Say and to See: Ekphrasis and Vision in Byzantium" in Robert S. Nelson (ed.), *Visuality Before and Beyond the Renaissance: Seeing as Others Saw* (Cambridge University Press, 2000), 143–68, at 153.

[2] In a later book review, Nelson provides a concise summary of these two theories of vision, while detailing the normalization of intromission in the early modern world with the birth of modern optics, writing: "This is why intromission [*sic*], the principal Byzantine theory of vision, was ideally suited for icon devotion and vice versa. Shortly after the end of the iconoclastic controversy, Patriarch Photios evoked such vision in a celebrated sermon at the inauguration of the new apse mosaic of Hagia Sophia. In intromission [*sic*], the viewer sends out a ray that touches the object seen and returns to the eye. Intromission [*sic*] is thus tactile and active and motivated by the viewer who does something to something else in order to see. Extramission [*sic*], a more passive sense of seeing, is the proper term for the generally accepted notion of vision in our world. Light rays reflect off the object seen, enter the eye, and pass to the brain. In the West, extramission [*sic*] began to gain adherents during the late Middle Ages, due to the translation of Arabic texts. Perspectival, optical, and physiological studies of vision during the early modern period gradually made extramission [*sic*] the norm in the West" (N.B. Here Nelson has inverted the terms intromission and extramission in his summary). See Robert S. Nelson, "Review of Charles Barber, *Figure and Likeness: On the Limits of Representation in Byzantine Iconoclasm*," *Art Bulletin* 85:4 (2003): 797–800, at 799.

of vision circulated in Byzantium, Nelson's analysis of classical and medieval sources, particularly their metaphors and literary tropes, concluded that the Byzantine world preferred a theory of vision whereby the eyes emitted rays that grazed the body of the object and returned to the viewer, thus enabling perception. Therefore, sight was understood to be a species of touch and an active rather than passive engagement with visual culture. The Byzantine viewer was able to visually touch the icon – the most important part of the visual culture of veneration – as if kissing and embracing its surface. Weaving metaphor, science, theology, and philosophy, Nelson claimed to have captured an all-encompassing theory of visual perception for the Byzantines, whereby viewer and object were not distinct entities but physically connected through the tactility of sight.

This haptic theory of vision, however, is by no means exclusive to Byzantine Studies or to Nelson's influential piece. It had already been prevalent in the study of ancient theories of vision for decades, as well as in (western) Medieval Studies. In 1983, for example, Margaret Miles described Augustine's theory of vision in a manner that presages Nelson's sentiments two decades later, almost verbatim, writing:

> For the classical people. . ., sight was an accurate and fruitful metaphor for knowledge because they relied on the physics of vision, subscribed to by Plato and many others, that a ray of light, energized and projected by the mind toward an object, actually touches its object, thereby connecting viewer and object.[3]

Miles goes on to stress, much like Nelson above, that a haptic model of sight produced a "connection" between viewer and object, wherein vision was "initiated by the viewer," and that in the act of seeing viewer and object became "united."[4] In other words, Miles emphasized the same keywords as Nelson, demonstrating the importance that the viewer's initiation of the process and connection with the object had in the Christian episteme. And, just like Nelson, Miles's summary also erroneously associates the intersection of sight and tactility with "Plato and many others," even though Plato's writings offer little to presume as much. In other words, Nelson's perspectives on Byzantine sight certainly did not develop in a vacuum, nor were they by any means unique or idiosyncratic. This is attested by the context of his essay's publication, emerging from an

[3] Margaret R. Miles, "Vision: The Eye of the Body and the Eye of the Mind in Saint Augustine's *De trinitate* and *Confessions*," *Journal of Religion* 63:2 (1983): 125–142, at 127. See also Margaret R. Miles, *Augustine on the Body* (Missoula, MT: Scholars Press, 1979), 9–39.
[4] Miles, "The Eye of the Body," 127–128.

interdisciplinary conference on vision and visuality at the University of California in Los Angeles in the spring of 1995.[5] As Nelson's edited volume demonstrates, his fellow medievalist contributors, including Georgia Frank, Cynthia Hahn, and Michael Camille, all followed in the haptic model of extramissive sight, as did their Classicist counterparts, Jaś Elsner and Shadi Bartsch.[6]

Research into ancient and late antique theories of vision has long featured the same steadfast adherence to tactile sight (whether it be defined as extramissive, intromissive, or interactionist in some capacity), even though the primary sources demonstrate that there was no single visual theory that was by any means restrictive or canonical for the ancient world – and, even less so any theory that could have been seen as tactile. As the works of Jaś Elsner, Shadi Bartsch, Helen Morales, Gérard Simon, David Lindberg, Olivier Darrigol, A. Mark Smith, Suzanne Conklin Akbari, and others have observed, theories of vision from the ancient through medieval worlds were immensely eclectic and diverse, depending on the philosophical, religious, and cultural matters that a particular author or thinker wished to stress.[7] And as Sue Blundell, Douglas Cairns, Elizabeth Craik, and Nancy Sorkin Rabinowitz caution, the operation of sight often appears to overstep its prescribed physiological or theoretical function, "such as the role of the eyes in the expression of anger, [where] the relevant interpretive frame is not the 'haptic' model of vision, but specific Greek understandings of the expressive, emotional, and social role of the eyes in ordinary social interactions."[8] In the Byzantine world, we witness the same matters at play. Byzantium comprised a diverse, multi-lingual, and fluid empire that lasted well over a millennium.

[5] Robert S. Nelson, "Introduction: Descartes's Cow and Other Domestications of the Visual" in Robert S. Nelson (ed.), *Visuality Before and Beyond the Renaissance: Seeing as Others Saw* (Cambridge University Press, 2000), 1–21, at 14.

[6] See Robert S. Nelson (ed.), *Visuality Before and Beyond the Renaissance: Seeing as Others Saw* (Cambridge University Press, 2000).

[7] See Jaś Elsner, *Roman Eyes: Visuality and Subjectivity in Art and Text* (Cambridge University Press, 2007); Shadi Bartsch, *The Mirror of the Self: Sexuality, Self-Knowledge, and the Gaze in the Early Roman Empire* (University of Chicago Press, 2006), esp. 57–114; Helen Morales, *Vision and Narrative in Achilles Tatius' Leucippe and Cleitophon* (Cambridge University Press, 2004), 8–35; Gérard Simon, *Le regard, l'être et l'apparence dans l'Optique de l'Antiquité* (Paris: Éditions du Seuil, 1988); David C. Lindberg, *Theories of Vision from Al-Kindi to Kepler*, revised edition (University of Chicago Press, 1996); Olivier Darrigol, *A History of Optics: From Greek Antiquity to the Nineteenth Century* (Oxford University Press, 2012); A. Mark Smith, *From Sight to Light: The Passage from Ancient to Modern Optics* (University of Chicago Press, 2015); Suzanne Conklin Akbari, *Seeing through the Veil: Optical Theory and Medieval Allegory* (University of Toronto Press, 2004).

[8] Sue Blundell, Douglas Cairns, Elizabeth Craik, and Nancy Sorkin Rabinowitz, "Introduction: Vision and Viewing in Ancient Greece," *Helios* 40:1–2 (2013): 3–37, at 22.

It is impossible to ascribe a monolithic theory of vision to the Byzantine worlds, which, as Michael Squire points out in the case of antiquity, "lacked any singular, culturally dominant model for explaining the mechanics of sight."[9] Byzantine writers demonstrate a great deal of coherence and unity in their syntheses and permutations of visual theories, but they are each uniquely varied in crucially nuanced ways.

In the context of Medieval Studies, it is perhaps possible to attribute the rise of haptic extramission to the Latin-speaking West, wherein the transmission of ancient theories of vision did at times explicitly deploy tactile language in a manner that was unparalleled in the Greek-speaking Byzantine world. Perhaps the most prominent exemplar of this tradition is Augustine, whose statements have served as a rallying cry for a tactile visuality, as suggested already in Margaret Miles's work. Namely, we witness this in Augustine's often-cited line describing how the "rays" (*radios*) of the eyes "shine through them and touch whatever we see" (*qui per eos emicant et quidquid cernimus tangunt*).[10] While we might propose reading this grasping cognitively, in the case of Augustine *tangunt* here appears to be resolutely haptic. Therefore, it is necessary to concede that in some circles sight might have been understood to be haptic – beyond the limits of metaphor alone – given Augustine's popularity and, to a lesser extent, the relative inaccessibility of the classic Greek texts and their commentaries to his Latin-speaking audience. Likewise, earlier Latin sources similarly attest to this haptic depiction of vision, as in the case of Apuleius's *Apologia*, where, in a summary on vision, he attributed to the Stoics the idea that the effluxes from the eye "touch and contact the object" (*quod extra tangant ac uisant*) through attenuated air.[11] In these two examples, we might appreciate the inklings of a haptic extramission in the medieval Latin-speaking West, but such statements have no true parallel in the Greek-speaking East.

Thus, it is permissible to propose that the haptic theory of extramission as a visual *lingua franca* for Byzantium originates in the West, but particularly in its historiography. In other words, haptic sight in

[9] Michael Squire, "Introductory Reflections: Making Sense of Ancient Sight" in Michael Squire (ed.), *Sight and the Ancient Senses* (London: Routledge, 2016), 1–35, at 15.

[10] Augustine, *De trinitate*, 9.3.3, ed. Johann Kreuzer, *De trinitate (Bücher VIII–XI, XIV–XV, Anhang: Buch V)* (Hamburg: Felix Meiner Verlag, 2001), 54; trans. Stephen McKenna, *On the Trinity: Books 8–15*, ed. Gareth B. Matthews (Cambridge University Press, 2002), 27.

[11] Apuleius, *Apologia*, 15, ed. and trans. Christopher P. Jones, *Apologia*, Loeb Classical Library 534 (Cambridge, MA: Harvard University Press, 2017). I wish to thank Christopher P. Jones for recommending this source.

Byzantium appears to be a projection from a certain body of comments made (in passing) in the Latin world and used as adages for vision in the secondary literature. By the late twentieth century, western medieval theories of vision had been far more studied and elucidated in the historiographic record than any of their Byzantine counterparts. Thus, it is understandable that Byzantinists would have grafted such presumptions about vision onto the study of Byzantine art and culture.

Yet even the articulations of haptic sight in the West seem to betray a certain confusion emerging as by-product of a crude cropping and reduction of Greek theories. I would say that in the examples of Augustine and Apuleius we encounter the fragments of more complex arguments and metaphors that have simply gone awry in their excerption and translation, rather than constituting any properly fleshed-out theory of haptic sight. This matter, however, goes well beyond the goals of the present book. Nevertheless, we can even witness the unease with which Michael Camille approached haptic vision in his contribution to Nelson's volume, for example. There, Camille struggled with a more nuanced perspective on the differences in theories of perception at play in the western world, giving due focus to the work of Avicenna.[12] His essay rightly placed attention upon an interactionist theory of vision, wherein both the eye and the object performed mutual actions in the process of sight, while still oriented around the misguided presumption that extramission always denotes a tactile theory of sight. However, in shifting his attention from sight alone to the internal senses, such as the "common sense" (*sensus communis vel sensatio*) and the "cognitive imagination" (*imaginatio vel formalis*) in Avicenna's *De anima* commentary, Camille was able to better grasp and grapple with the problem of tactility from the perspective of the mind's perceptions, rather than the senses' sensations alone.[13] In a sense, Camille's essay indirectly responded to Nelson's contribution by demonstrating that the Aristotelian (and Platonic) heritage was never quite founded upon haptic sight, understood as the touch of the optical rays, but rooted in an interactionist theory wherein the cognitive gaze grasped the object in the mind. Camille, however, did not explicitly demonstrate just how tactility emerged from the operations of the common sense and the imagination, nor did he endeavor to take down haptic sight fully, as I aim to do in

[12] Michael Camille, "Before the Gaze: The Internal Senses and Late Medieval Practices of Seeing" in Nelson (ed.), *Visuality Before and Beyond the Renaissance*, 197–223.
[13] See Camille, "Before the Gaze," 198–202, 204–205, 211–214.

this volume. Instead, Camille only politely side-steps haptic vision's problematic implications for medieval art and culture.

In projecting stereotypes of western visuality onto Byzantium, Nelson and others designated tactility to be the defining aspect of Byzantine visual theories of sight, but, as I argue in this book, the one thing that most theories of vision in the Byzantine period seemed to generally agree upon was that touch proper did not occur through sight, despite the frequent haptic language and metaphors that characterized the process of perception. By looking closely at classical, late antique, and Byzantine sources, I aim to show that the notion of haptic vision in both the classical and Byzantine worlds was a product of metaphors that in reality were describing cognition and the mental processes of perception. In other words, the idea of sight being haptic does not emerge from a Byzantine theory that sight is a species of touch, but due to the shorthand describing the processes of perception. It must be clarified at the outset that this book's argument is not that one should favor one ancient theory of vision over another, such as intromission over extramission. Instead, the goal is to show overwhelmingly that the Byzantine rhetoric of haptic sight pointed to the mind's grasp and apprehension, not the literal grasp of the eyes. Many of the usual suspects in discussions of sight will be brought into the dialogue, particularly those that relate sight to touch.

This book's launching point is Nelson's essay and its primary sources. I actively read his argument and the sources closely, against the grain, and alongside other crucial texts, to demonstrate how Byzantine authors writing on medicine, the natural world, and theology produced nuanced articulations of sight. By distancing sight from touch we can then attend to what is actually being described by this haptic language, namely, the cognitive unfolding of perception, a process in which the imagination is the centerpiece. This shift in focus allows us to recover an image theory that did not fetishize the illusion of presence in the icon, but rather expressed the desire and "directed absence"[14] upon which the icon relied theologically. Turning to the importance that the imaginative faculty played in perception and the viewer's investment in the image, we are able to read anew key texts about Byzantine art, both before and after the Iconoclastic period, to appreciate how the imagination was responsible for animating the icon in the viewer's mind. It is the imagination that allowed the viewer to feel as if they were in the presence of a holy person depicted

[14] Charles Barber, *Figure and Likeness: On the Limits of Representation in Byzantine Iconoclasm* (Princeton University Press, 2002), 121.

in the icon, speaking with and touching them, but never under the illusion that they actually were in said person's presence.

A Brief History of Byzantine Theories of Vision

Modern scholars have often divided classical, medieval, and early modern theories of vision into two major camps: extramission and intromission. Thinkers like Euclid, Empedocles, Hipparchus, and the Stoics generally fall into the category of extramission, whereby the eyes emit flames, rays, or some form of efflux that flows to the object and contacts it somehow. It is from this theory that we get the notion of haptic extramission, because many of the metaphors explaining the operation of the effluxes are haptic. For example, the effluxes are rays that extend "just as by the touch of hands" (καθάπερ χειρῶν ἐπαφαῖς) to the object, in the case of Hipparchus, or they are a fiery mixture of *pneuma* extending to the object, seeing "as if through the walking stick" (ὡς διὰ βακτηρίας) of the blind touching the object, in the case of the Stoics. Intromission, on the other hand, details a series of divergent processes whereby rays, colors, images, or light emitted from the object stream into the eyes. For Aristotle, the diaphanous medium betwixt the viewer and the object conducts colors from the object's surface to the eyes when activated by light, or in the case of the atomists, "replicas" (εἴδωλα) are shed by the objects and impinge themselves into the eyes of the viewer, according to the theories of Leucippus and Democritus, popular with the Epicureans.

However, as Squire and others have noted, there are other theories that are far more "interactionist" than the binary terms extramission and intromission would suggest.[15] For example, Plato, who is often taken as a paradigmatic extramissionist, actually believed that vision occurred through the union of a flame (φλόγα) coming from the object and the visual stream of the eyes, a union activated by external light. Even the Stoic theory of *pneuma* held that the fiery mixture flowing through the eyes could not reach the object of sight by itself, but did so because the mixture put the surrounding air in a state of tension that allowed the two together to conduct an object's colors back to the eyes, a process that Galen expounds and repeatedly clarifies. Furthermore, throughout the antique and post-antique worlds, there was an immense variety of language describing theories of vision. Even when clearly describing the theory of a particular author, sources often varied in their characterization of the

[15] Squire, "Introductory Reflections," 16.

effluxes, diversely described as rays, light, fire, flames, or, more generally, as an efflux or emanation. This great variation in an eclectic body of sources from the ancient to early modern period shows that authors freely reworked the tradition.

Byzantinists and Classicists alike have stressed the importance of tactility in premodern theories of vision, often stressing the operation of sight in relation to these haptic metaphors. Nelson's summary of Byzantine theories of vision relied on this general consensus, and his words, quoted above, echo the very model that Hipparchus describes in the extant fragments of his theory, where "rays from the eyes, stretched out to the ends just as by the touch of the hands themselves, seizing the bodies outside to deliver an apprehension (ἀντίληψιν) of them to the faculty of sight."[16] Preserved in the work of Aetios of Antioch, whose doxography was used by a long line of writers, from Nemesios of Emesa in the late fourth century to Michael Psellos in the eleventh, this single-sentence description was merely one of many. And it is the only theory that explicitly relates a theory of vision in explicitly haptic terms. Yet even here touch is used as a metaphor. The thing returned is the "apprehension" or "comprehension" (ἀντίληψιν) of the object, not the object itself, which suggests that Hipparchus meant to describe a cognitive process, not a physical imprint on the eyes. Late antique and Byzantine sources use Hipparchus's line only in passing, to lay the groundwork for the later theories of Plato, Aristotle, and Galen. Thus, while sight certainly had haptic valences in the pre-Socratic world, later thinkers from Plato onward actively fought against this tendency, or at least tried to restrict it to metaphor.

Despite the great diversity of theories, it is nevertheless possible to loosely define two major groups of theories that held sway in the Byzantine world. First, in circles educated in philosophy (a matter to which I shall return in the following section), up through the twelfth century, we witness a preference for the Platonic or Aristotelian theories of vision. Oftentimes, Plato's theory of a union of rays allowed authors a middle ground to articulate the agency of both the object and the viewer, permitting them to mediate the divide between intromission and extramission. Aristotle's theory of the transparent, while downplaying the agency of the viewer, still allowed for the notion that an intervening medium served as

[16] "ἀκτῖνας ἀπὸ τῶν ὀφθαλμῶν ἀποτεινομένας τοῖς πέρασιν ἑαυτῶν καθάπερ χειρῶν ἐπαφαῖς καθαπτούσας τοῖς ἐκτὸς σώμασι τὴν ἀντίληψιν αὐτῶν πρὸς τὸ ὁρατικὸν ἀναδιδόναι." Aetios of Antioch, *De placitis reliquiae (Theodori et Nemesii excerpta)*, IV:13.9, ed. H. Diels, *Doxographi Graeci* (Berlin: Reimer, 1879), 404. Unless otherwise indicated, all translations are my own.

the point of communion between viewer and object. The two theories of Plato and Aristotle could be mixed together or unified. One such theory, for example, claimed that the intermediary of air or water is the medium in which sight occurs, but rays or fires also emerge from the eyes or objects. Second, it is quite clear that the Galenic approach to *pneuma* was the theory par excellence for medical authors. Many of the physiological treatises that come down to us are quite silent regarding the exact physics of this visual efflux in the world, but they devote their attention to ameliorating diseases of the eye by enhancing or stanching the flow of the pneumatic emission. Much of this work, and its assumptions, depends directly upon Galen's writings. These two camps – those who focused on the emission or reception of rays and fires and others who focused on the outpouring and operation of the optic *pneuma* – comprise the two major approaches to theories of vision in the Byzantine world.

Two other minor groups, however, still make their appearances throughout the literature. The first of these is represented mainly by Euclid and, to a lesser extent, Ptolemy. Euclid's theories often featured in the teaching of the *quadrivium*, the four key subjects of Byzantine education, composed of arithmetic, geometry, music, and astronomy. Although Euclid was an extramissionist, whose linear rays are the bedrock of his mathematical teachings, his work says little about the physiology of sensation. His work was used primarily in service to mathematical optics, that is, to understand the geometry and mathematics of the rays of vision, calculating the effects of reflections, refraction, and so on. A curious aspect of Euclid's work in the medieval world is that even authors who disagreed with the theory of extramissive rays nevertheless retained his models because of their mathematical accuracy in studying visual phenomena. This happened in the Arabic world, which developed new intromissive theories, and also with Ptolemy, who built upon Euclidian teachings for his optical calculations. Whereas Ptolemy's astronomical corpus and optics were known in the Byzantine world but rarely used, Euclid's presence was far more prominent in Byzantine education, but it was relegated to the mathematical geometry of optics alone. In other words, it carried little (if any) weight on notions regarding the physiology of vision, and certainly had nothing to say on the cognitive aspects of perception. Lastly, the final popular camp in Byzantine theories of vision is comprised of the atomists, those who believed that objects emit replicas or images (εἴδωλα) of themselves that are passively received by the eyes. While we see more popular references to the atomists than we do to Euclid or Ptolemy, these often occur in passing and are often meant to exploit the marginal status of

that theory. The atomists are treated as a curiosity in the history of theories of vision, and there is not much evidence to suggest a sincere belief in their theory.

Classical Education and the Transmission of Knowledge

The great challenge in constructing a survey of Byzantine theories of vision and their relation to religious and secular practices is that most of the sources that come down to us are from elite circles tied to centers of knowledge and study. To this day, our understanding of education in Constantinople, and Byzantium more broadly, is lacking. However, we can see how widespread theories of vision were throughout texts like homilies, aimed at broad audiences, for which reason a third of this volume is dedicated to the close study of Photios's Homily 17 on the icon of the Theotokos in the apse of Hagia Sophia. It is also worth contextualizing the work, education, and teaching of some important figures that appear prominently in this book, such as Michael Psellos, who attests – both in his sources and his influence – to a tradition of visual knowledge unbroken from late antiquity. Let us briefly sketch out some important points regarding Byzantine education and the reception and transmission of the classical heritage.

Over the course of the empire, there was never any form of compulsory education, yet the resources were there for students who had the ability to pay for it. Higher education itself was relegated to the major cities and from the ninth century onwards associated with imperial efforts and patronage, and the works of prominent private tutors.[17] Basic literacy was relatively widespread, however, with particularly high levels amongst the elites.[18] Byzantine schooling overall was divided loosely into what we might call "primary" and "secondary" education.[19] Primary education or *propaideia* began around the ages of six to eight, lasted for three to four

[17] See Athanasios Markopoulos, "Education" in Robin Cormack, John F. Haldon, and Elizabeth Jeffreys (eds.), *The Oxford Handbook of Byzantine Studies* (Oxford University Press, 2008), 785–795, esp. 786–788.

[18] On literacy in Byzantium, see Michael Jeffreys, "Literacy" in Robin Cormack, John F. Haldon, and Elizabeth Jeffreys (eds.), *The Oxford Handbook of Byzantine Studies* (Oxford University Press, 2008), 796–802. See also Robert Browning, "Literacy in the Byzantine World," *Byzantine and Modern Greek Studies* 4 (1978): 39–54; Robert Browning, "Further Reflections on Literacy in Byzantium" in S. Reinert et al. (eds.), *To Hellenikon: Studies in Honor of Speros Vryonis, Jr.* (New Rochelle, NY: Aristide D. Caratzas, 1993), 69–84.

[19] On the use of these terms, see R. A. Kaster, "Notes on 'Primary' and 'Secondary' Schools in Late Antiquity," *Transactions of the American Philological Association* 113 (1983): 323–346.