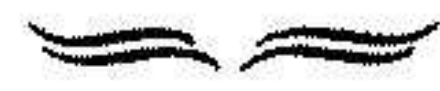


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## Simon and Maritain on the Vocation of *Species in Medio*



Jacques Maritain and Yves Simon contributed a wealth of philosophical insights to the problems of cognition, noetics, and epistemology. Their developments of Thomism and the *philosophia perennis* were achieved through their erudite dialogue with ancient, medieval, and contemporary approaches to the nature of being. Maritain and Simon both defended sophisticated Thomist accounts of critical realism. Simon, in particular, dedicated a number of studies to the Thomist doctrine of sensation, and it is within these detailed studies that he took up the problem of intentions in the medium.<sup>1</sup> This paper aims to develop further Maritain's and Simon's accounts of Thomist realism by placing their treatments of sensation and intentional beings in the medium, i.e., *species in medio*, within Aquinas's robust metaphysical account of the transcendentals thing and truth.

I shall begin with a brief introduction to the problem of sensation and the medium.<sup>2</sup> Next, I turn to Thomas Aquinas's approach to the nature of

1. See Yves Simon, *Introduction to Metaphysics of Knowledge*, translated by Vukan Kuic and Richard J. Thompson (New York: Fordham University Press, 1934), chap. 3; Yves Simon and Julien Peghaire, "The Philosophical Study of Sensation," *The Modern Schoolman* 23, no. 3 (1946): 111–19; Yves Simon, "An Essay on Sensation," in *The Philosophy of Knowledge*, edited by Roland Hude and Joseph P. Mullally (Chicago: Lippincott, 1960), 55–95; reprinted in *Philosopher at Work: Essays by Yves Simon*, edited by Anthony O. Simon (Lanham, Maryland: Rowman and Littlefield, 1999), 57–111. All citations are from the original. Jacques Maritain, *Distinguish to Unite or The Degrees of Knowledge*, translated by Gerald Phelan and Ralph McNerny, *Collected Works of Jacques Maritain*, vol. 7 (Notre Dame, Indiana: University of Notre Dame Press, 1995).

2. Sensation and the problem of intentions in the medium in Thomas Aquinas and other related issues are treated in the following recent studies. George Klubertanz, "De Potentia 5.8: A Note on the Thomist Theory of Sensation," *The Modern Schoolman* 26, no. 4 (1948): 323–31;



intentional beings in the medium and the distinction between natural being and intentional being. I will then summarize Yves Simon's development of Aquinas's theory of sensation before addressing the central problem of *species* in the medium. Simon will be our guide through various medieval attempts to understand the peculiar kind of participated causality exhibited in the medium's capacity to communicate intentional beings apsychically from the sensible reality to the sense powers of the animal. Simon's treatment of the *transitive intentional acts* of sensible things will uncover for us the vocation of *species in medio*. As we will see, the doctrine of transitive intentional acts elucidates the manner in which all sensible things communicate *species* into the medium, not for the sake of themselves, but for the sake of potential knowers. Finally, in the last section we will address the unusual sort of participation in separate substances that Aquinas attributes to *species* in the medium. But instead of supporting this doctrine's more mysterious elements by appealing to the empirical physics of medieval cosmology, we will avail ourselves of Aquinas's doctrine of the transcendentals thing and truth to explain the intentional vocation of *species in medio*. This paper does not promise to offer a complete solution to this recondite difficulty, but instead aims to set the contours of the problem in relief, to take note of the theoretical advances of Aquinas and Simon, and finally,

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Dávid W. Hamlyn, *Sensation and Perception* (London: Routledge and Kegan Paul, 1961), 46–51; Sheldon M. Cohen, "St. Thomas Aquinas on the Immaterial Reception of Sensible Forms," *The Philosophical Review* 91, no. 2 (1982): 193–209; John Haldane, "Aquinas on Sense-Perception," *The Philosophical Review* 92, no. 2 (1983): 233–39; Paul Hoffman, "St. Thomas Aquinas on the Half-way State of Sensible Being," *The Philosophical Review* 99, no. 1 (1990): 73–92; Martin Tweedale, "Origins of the Medieval Theory That Sensation Is an Immaterial Reception of a Form," *Philosophical Topics* 20, no. 2 (1992): 215–31; Robert Pasnau, *Theories of Cognition in the Later Middle Ages* (Cambridge: Cambridge University Press, 1997), introduction to chap. 3; Gabriele De Anna, "Aquinas on Sensible Forms and Semimaterialism," *Review of Metaphysics* 54, no. 1 (2000): 43–63; Myles Burnyeat, "Aquinas on 'Spiritual Change' in Perception," in *Ancient and Medieval Theories of Intentionality*, edited by Dominik Perler (Leiden: Brill, 2001), 129–53; John O'Callaghan, "Aquinas, Cognitive Theory, and Analogy: A Propos of Robert Pasnau's *Theories of Cognition in the Later Middle Ages*," *American Catholic Philosophical Quarterly* 76, no. 3 (2002): 451–82; Robert Pasnau, "What is Cognition? A Reply to Some Critics," *American Catholic Philosophical Quarterly* 76, no. 3 (2002): 483–90; Paul MacDonald Jr., "Direct Realism and Aquinas's Account of Sensory Cognition," *The Thomist* 71, no. 3 (2007): 348–78; Jörg Alejandro Tellkamp, "Aquinas on Intentions in the Medium and in the Mind," *Proceedings of the American Catholic Philosophical Association* 80 (2007): 275–89. With the sole exception of Klubertanz, none of these studies even cites, let alone discusses, Yves Simon's perspicuous treatment of these problems. What is also astonishing is that, aside from Klubertanz, none of these studies on Aquinas addresses the *locus classicus* treatment of intentions in the medium in *De potentia* q. 5, a. 8, which plays a central role in Simon's explication of Aquinas.



to propose that a robust metaphysics of the transcendentals provides an insightful way to understand the vocation of *species in medio*.

### I. The Problem of Sensation in the Medium

Let us begin with the problem of the medium. In acts of sensation we cognize the real as sensible. To be sure, sensory cognition of reality is not equivalent to the cognition of reality in the full sense of human knowledge of reality. For human knowledge of reality requires the additional complementary acts of cogitative perception and intellectual insight and judgment. Nonetheless, given the proper qualifications, acts of sensation do make consciously present a sensory awareness of reality as sensible. What is involved in such acts of sensation? Quite a lot as it turns out. In this study we restrict ourselves to questions about the exigencies of the medium in all acts of external sensation. Prior to investigating *what* these exigencies are, we must first affirm *that* a philosophical analysis of the medium is required for a philosophical account of sensation and perception. For both questions we must begin with what is more known with respect to us, prior to plunging into an explanation of what it is in itself.

That there is some sort of medium between the sensor and the sensible is abundantly clear in the case of vision, audition, and olfaction. The source of visibles, audibles, and olfactibles within the world need not come into corporeal contact with our eyes, ears, and nose in order for us to see, hear, and smell such realities. In fact, our acts of vision are often impeded if not thwarted whenever visible realities do come into corporeal contact with our eyes. Clearly enough the sensible reality one sees, hears, and smells can be a distant corporeal thing, and despite such distance this reality's *per se* sensible qualities and *per accidens* sensible features can act on one's sense faculties, making consciously present these cognoscible features of reality.<sup>3</sup> The distance between the sensible sensed and the sensory power that is sensing is what we call the "medium," whether it is a gaseous, liquid or solid medium. The medium is whatever is "in the middle" between the sensory observer and the distant sensible reality. The distant sensible reality is itself

3. See Aristotle, *De anima* 2.6; Thomas Aquinas, *In De anima* 2.13 (Leonine vol. 45.1). All quotations of Thomas's commentary on the *De anima* will be from the Leonine edition. I have also included in brackets references to the earlier Marietti edition; see Thomas Aquinas, *Sententia libri de anima*, edited by A. M. Pierotta (Rome: Marietti, 1959).



sensed as a distal corporeal thing; indeed, "distance" itself falls under the *per se* common sensible qualities.

Often enough the medium itself is not sensed when the sensible realities are sensed; rather, the medium seems to be absent relative to the sensibles that we attend to consciously. Within most acts of sensation the medium remains unnoticed, if not entirely unnoticeable, without additional instrumentation. Hence, the medium's function, one might suggest, is to be absent so that it can make sensibles present. Yet we also know that the medium can influence or affect the presentations of the sensibles. Listening to an audible reality when submerged under water is not the same as hearing the same audible reality when not submerged. Seeing a visible thing under different shades of light, or through a transparent or translucent liquid, gas, or solid alters the visible presentations of the thing. It seems that at the level of description of what is more known to us, we can affirm that the medium allows sensible realities to be communicated across distances, while also shading and influencing whatever sensibles are communicated through it. How is this possible?

One is tempted to say that the sensible reality itself must be able to travel across a great distance to one's sensory organs, and yet without us noticing the sensible reality making this journey. Such an explanation, however, confuses natural corporeal activities with what we will call "intentional" activities. While it is certainly true that sensible bodies do not transverse spatial distances without physically negotiating through a physical medium—which is true at the orders of both description and explanation—we cannot affirm that such explanations apply to our sensations of sensible realities through the medium in the same way. The first problem is that our sensory observations and descriptions of the sensible realities communicated through the medium to sensory faculties do not consist in also observing and describing sensible bodies moving across a medium towards us. If they did, then we would always see and hear dynamic visible and audible realities with the ordinary trajectories they have with respect to other realities *and* their additional visible and audible movements of converging upon our eyes and ears. But this is not what we find at the order of sensory observations and descriptions of sensible things. I see the visible thing moving at a distance with respect to other dynamic visible things interacting at a distance. What I do not see are the exact same distal visible realities shooting at my eyes. I can judge that there are dynamic visible bodies in



motion, that visible things communicate their visibility to me, and that this visibility is communicated through a medium, but as for there being an additional kind of bodily movement on the part of visible realities—such as a motion that is ubiquitously and continuously flying towards my visual standpoint—this is something I do not observe and cannot affirm on the basis of a description of visual-perceptual experience alone.<sup>4</sup> Moreover, the same visible reality can be seen at the same time by another observer, albeit, with a distinct profile or perspective. Nonetheless, the same invariant identity within the manifold is observed, described, and affirmed as seen by others. In short, the same visible body is not seen to be moving around on its own behalf as well as simultaneously shooting in two other directions at two different sensory observers.<sup>5</sup>

This account might seem to fly in the face of everything we now know today about optics and the visual system of human beings. However, we must be clear about what order of description and explanation we are concerned with. That there is a continuous onslaught of quanta barraging my retina is a probable empirical account of what physical entities do to parts of my body when I see, but photons and other items identified through scientific experimentation are not visible to any ordinary human power of vision, and to call such items visible without qualification is to lapse into the worst kind of equivocation. Our knowledge of such items and their nomological characteristics regularly requires vision in the ordinary sense (we must be able to *see* the evidence presented through various experi-

4. “How are we to take talk of sounds being heard to ‘come from’ a location? It might be that sounds are heard to come from a particular place by being heard first to be at that place, and then to be at successively closer intermediate locations. But this is not the case with ordinary hearing. Sounds are not heard to travel through the air as scientists have taught us that waves do. Imagine a scenario in which engineers have rigged a surround-sound speaker system to produce a sound that seems to be generated by a bell across the room. This sound subsequently seems to speed through the air toward you and to enter your head like an auditory missile. . . . This would indeed be a strange experience unlike our ordinary experiences of sounds, which present them as stationary relative to the objects and events that are their sources.” Casey O’Callaghan, *Sounds: A Philosophical Theory* (Oxford: Oxford University Press, 2007), 35.

5. Many of these kinds of objections to eliminativist and reductionist accounts of sensible qualities have been raised and developed at length by James Gibson, Alva Noë, and Casey O’Callaghan. See James J. Gibson, *The Senses Considered as Perceptual Systems* (Boston: Houghton Mifflin, 1966); *The Ecological Approach to Visual Perception* (Boston: Houghton Mifflin, 1979); Max R. Bennett, and Peter M.S. Hacker, *Philosophical Foundations of Neuroscience* (Oxford: Blackwell Publishing, 2003), chap. 4; Robert Sokolowski *The Phenomenology of the Human Person* (New York: Cambridge University Press, 2008), chaps. 12–13; Alva Noë, *Perception in Action* (Cambridge: MIT Press, 2004); O’Callaghan, *Sounds: A Philosophical Theory*.



mental apparatuses), but the sophisticated experimental instrumentation required to examine them shifts our sensory-perceptual orientation to a different order of description and explanation. The conclusions empirical scientists arrive at concerning the dynamics of the medium or our nervous system are obtained through various experimental techniques, which will always presuppose the ordinary use of sensory-perceptual systems and could not undermine the veridicality of the latter without undercutting the scientific conclusions achieved through the former. It is self-defeating to affirm both that photons are real, and that visible bodies are only phenomenal and consequently not real. We can only scrutinize and assess the empirical evidence for the reality of photons by first affirming the reality of visible bodies, such as, for example, the computer monitors we must be able to see to acquire the data our instruments register and display with respect to the activities of photons.<sup>6</sup> If we wish to avoid such embarrassing consequences as denying the reality of visible qualities like color, because we empirically affirm the reality of the colorless photons we cannot see, then we must carefully distinguish philosophical from empirico-logical questions, as Maritain and Simon so often sought to do. While empirical scientists should conduct experiments on and provide explanations of the physical and chemical properties that travel through the medium, such accounts cannot of themselves provide a philosophical solution to the cognitive, epistemological, and ontological problems of how sensible realities are communicated through the medium. The particular philosophical problem at hand requires that we explain the following peculiarity: acts of sensation require a medium that is somehow able to communicate sensible

6. "[T]hat photons reflected off the illuminated object cause changes to protein molecules in the retina, which in turn transmits electrical impulses to the fibres of the optic nerve, does not show that what we see is not really coloured, any more than it shows that we do not see what we see directly. *What* we see is not the *effect* of an object on us. The effect of an object on our nervous system is the stimulation of the cells of the retina, the effect of this on the optic nerve, the consequent excitation of the cells in the hypercolumns of the 'visual' striate cortex—but none of this is perceived either by the brain (which can perceive nothing) or by the person whose brain it is. Rather, *that* we see is a consequence of the action of illuminated or luminous objects on our visual system, and *what* we see are those objects, colour and all. . . . So too, it is confused to suppose that because it is senseless to attribute colour to light waves or sound to sound waves, therefore *what* we see is not coloured and *what* we hear is not noisy—but rather the colour and sound *in us*, being 'mental constructions created in the brain.' . . . This misconception stems, among other things, from a miscegenous crossing of the scientist's causal explanation of the neurophysiology of perception with the normal description of a creature's perceiving an object." Hacker, *Philosophical Foundations of Neuroscience*, 131–32. Emphasis in original.



realities to multiple sensory observers without the medium itself becoming the reality that is sensed. This is ubiquitous to all acts of sensation, for all acts of sensation quite obviously minimally require the medium of our neurophysiology. Vision, audition, olfaction, gustation, and tactility all require the proper dispositions and some degree of optimum functioning of our bodily organs. Let us begin with the medieval approach to the philosophical problem of sensing through the medium.

## II. Aquinas on Natural and Intentional Being

Medieval Aristotelians like Thomas Aquinas accounted for the phenomenon of sensation through a medium by distinguishing two distinct *ways of being*. Any sensible reality is able to be present and act according to the manner of natural being (*esse naturale*) and intentional being (*esse intentionale*) or spiritual being (*esse spirituale*).<sup>7</sup> Such realities, on the basis of their essence specified powers, i.e., first acts (*actus primus*), and ordered activities, i.e., second acts (*actus secundus*), are able to determine the surrounding environment according to these two modes of being. When a physical being acts according to the mode of natural immutation, the result is a formal displacement of contraries. The heat of the agent displaces its contrary in the patient, making the non-hot patient actually hot, but the same physical being is also simultaneously acting according to the mode of intentional being in virtue of which no such displacement occurs. Rather, the same formal determination of the essence-structured acts can be inten-

7. The *locus classicus* for the problem of intentional beings in the medium in Thomas Aquinas is *De potential*, q. 5, a. 8. For the distinction between natural being and intentional or spiritual being, see Aquinas, *In De anima* 2.14 (Leonine vol. 45.1:128.268–71): “Immutatio uero spiritualis est secundum quod species recipitur in organo sensus aut in medio per modum intentionis.” ST I, q. 78, a. 3: “Ad operationem autem sensus requiritur immutatio spiritualis, per quam intentio formae sensibilis fiat in organo sensus. Alioquin, si sola immutatio naturalis sufficeret ad sentiendum, omnia corpora naturalia sentirent dum alterantur.” ST I–II, q. 22, a. 2, ad 3: “Dupliciter organum animae potest transmutari. Uno modo, transmutatione spirituali, secundum quod recipit intentionem rei. Et hoc per se invenitur in actu apprehensivae virtutis sensitivae, sicut oculus immutatur a visibili, non ita quod coloretur, sed ita quod recipiat intentionem coloris. Est autem alia naturalis transmutatio organi, prout organum transmutatur quantum ad suam naturalem dispositionem, puta quod calefit aut in frigidatur, vel alio simili modo transmutatur.” See also Thomas Aquinas, *In IV Sent.*, d. 44, 3.1.3; *In I De anima*, 10; II, c. 24; *In De sensu*, 4; ST I, q. 56, a. 2, ad 3; q. 75, a. 1, ad 2; *Quaestio disputata de spiritualibus creature* 1, ad 11; Simon, *Metaphysics of Knowledge*, chaps 1 and 3; Maritain, *The Degrees of Knowledge*, “Critical Realism” §III. 22. [V]–[VII], 121–25ff.



tionally impressed into a medium, sensory organ, or sensory faculty without any displacement of the patient's formal constitution. This intentional presence, when received by a cognitive faculty, makes the thing cognitively present to the cognitive subject by displaying the object itself to our conscious awareness. The red thing can act on the eye and the faculty of sight—thereby causing vision—without the eye becoming red.<sup>8</sup> In vision, the form of both the agent and receptive faculty are maintained, the former according to intentional being, the latter according to natural being. Aquinas employs the same distinctions in his commentary on Aristotle's famous analogy of the signet ring that impresses its form into the wax without impressing the matter of the ring.<sup>9</sup> In the case of natural immutations, the patient becomes hylomorphically like the agent, that is, the resultant formal change terminates in the material patient accidentally becoming a red thing. With intentional immutations, the patient only becomes like the agent in form, while the material substrate of the patient does not alter with respect to its own form.

In vision, audition, olfaction, gustation, and tactility, the same intentional form must first be transferred through a medium before it is impressed on a sense faculty. According to Aquinas, the sensible reality communicates a likeness (*similitudo*) of its form into the medium, which does not displace the formal constitution of the medium itself. The red sensible object does not cause the air to become red before I actually see the red object; the medium is able to transmit the sensible reality in an apsychic intentional way prior to my intentional psychic reception of the sensible object. How the medium is able to intentionally transfer the forms of material substances will be briefly taken up later on. Before we address this thorny problem, we must examine a few more details of this Thomist account of natural and intentional immutation, especially with respect to sensation. Yves Simon's various treatments of the problem of sensation will guide us through this perennial problem.<sup>10</sup>

8. See Thomas Aquinas, *In De anima*, 3.26 (Leonine vol. 45.1:179.98–180.145), (Marietti, III.2, nos. 589–590).

9. See Aristotle, *De anima*, 2.12, 424a17–24; Thomas Aquinas, *In De anima*, 2.24 (Leonine vol. 45.1:168.13–169.17) (Marietti, nn. 551–554).

10. See Simon, *Metaphysics of Knowledge*, chap. 3; *Essay on Sensation*.



### III. Simon on Sensation: Passions, Actions, and Unions

Simon distinguishes three prominent features of change: passion, action, and union. He applies these three features of immutation to the case of sensation to place in relief what is distinctive about sensation in contrast to physical change. These distinctions help us to elucidate the differences between the natural mode of being and intentional being. In natural being, the displacement of one form by another in the subject involves a *heteronomic passion* and a *subjective union* of the form and the subject. But in intentional being we find an *autonomic passion* whereby the subject is able to maintain the form received without any subjective alteration occurring through the union. Simon notes that in the first case, "the patient undergoes a law that is not its own, but that of the agent: it would be quite fitting to designate such a passion as *heteronomic passion*." But in the second case, "[t]he sense receives its own perfection from the object, which acts as a friendly principle. This is what St. Thomas calls a *passio improprie dicta*; let us say, an *autonomic passion*."<sup>11</sup> With the reception of intentional being into a subject, i.e., the form without the matter, there is an *objective union* of the form and the subject. Finally the act that brings about the subjective union of heteronomic passions is a *transitive action*, whereas the objective union of autonomic passions occurs through an *immanent action*.<sup>12</sup>

Salient to sensation as a distinct kind of cognition from intellection is its essential involvement with heteronomic passions, transitive actions, and subjective unions. Any act of sensation involves the alteration of some aspect of our physiology. Sensory powers are the formal organization of a material substrate that involves an integrated complex of diverse organs, and in particular, our peripheral and central nervous systems. The action potential of any neuron involves a heteronomic passion stimulated by a

11. Yves Simon and J. L. Péghaire, "The Philosophical Study of Sensation," 113. For Aquinas, see ST I-II, q. 22, a. 1. Emphasis in original.

12. The salient difference between transitive and immanent action, Simon insists, is not whether the act produces an effect or whether the act remains in the subject, but whether the act is an end in itself or for the sake of an end. Intellectual apprehension is a paradigmatic instance of immanent action, but this immanent action produces a concept or *verbum mentis*. Nevertheless, intellectual apprehension does not *consist in* producing a concept, but in understanding, which involves a conceptual expression of a mental word. See Aquinas, *Summa contra Gentiles* I, chap. 53; *De potentia* q. 8, a. 1; ST I, q. 85, a. 2, ad 3. For Simon's own erudite and comprehensive treatment of transitive and immanent action, see Simon, *Metaphysics of Knowledge*, chap. 2.



transitive action brought about through the reception by various dendrites of neurotransmitters from the axons of other pre-synaptic neurons; the result is a subjective union of the neuron with its altered state as being momentarily either negatively or positively charged.

Simon cautions us to avoid taking these two modes of being, the physical and the psychical, as two reified atomic units of being with entirely independent lives of their own, as theories like property dualism and epiphenomenalism often do. For example, if I place my cold hands near a fire, it will warm them up, which is also true of my garments, but my garments do not also have a concomitant act of sensation. My hands are indeed heated through a heteronomic passion, but I also *feel* heat, that is, heat is intentionally present to my tactile powers through a concurrent autonomic passion and immanent action. In sensation, the physical and psychical are distinct yet inextricable aspects of the same hylomorphic reality, even in vision and audition. For Simon, this latter contention is a development of Thomas Aquinas's and other medievalist's views on the entirely *spiritual* immutation proper to sight.<sup>13</sup> The confluence of immutations by way of natural and intentional being belongs to the essence of sensibles communicated through a medium to a sense organ and sense faculty. Not even God can cause an act of sensation without physical sensible objects acting on our organs by a natural immutation, and our sensory faculties by an intentional immutation.<sup>14</sup>

Thus far we have articulated the essential differences between *things* and *intentions*, what the scholastics often called *species*.<sup>15</sup> Natural things are primarily what they are, a white thing's self-identify as white is primary, it is only secondarily that its whiteness might *represent* something else, like purity. But *species* are primarily representative. *Species* are first the identity of *the other*, i.e., they are intentional entities, and it is only on reflection that we directly address them as real entities in themselves that are intentional. With these distinctions in mind we can now turn to the central problem of sensible *species* in the medium.

13. Simon, *Essay on Sensation*, 76; *Metaphysics of Knowledge*, 96–99 n. 17; Thomas Aquinas, *In De anima*, 2.23 (Leonine v. 45.1:166.205–217) (Marietti, no. 544); ST I, q. 78, a. 3.

14. See Simon, *Essay on Sensation*, 65 n. 13; Aquinas, ST I, q. 84, a. 6; II-II, q. 173, aa. 2–3; Tellkamp, "Aquinas on Intentions in the Medium and in the Mind," 282–83.

15. See Simon, *Essay on Sensation*, 75ff.; Maritain, *The Degrees of Knowledge*, "Critical Realism," § III. 22. [VI]-[VII], 122–25ff.



#### IV. The Origins of Sensible *Species* in the Medium

We want to understand the nature of how sensation is able to apprehend its objects, and in particular, how *species* and the medium are so disposed that they can be principles of sensation. The central question for Simon concerns the initial act of sensation: *How did sense impressions get there?*<sup>16</sup> Simon insists that there could not be a more pressing philosophical problem than the genesis of sensation and its apprehension of a sensible reality. Since all scientific knowledge has its origins in the humble acts of our external senses, the absence of any sophisticated account of the genesis of sensation leaves the foundations of our philosophical noetic in an embarrassing state. Sensation is epistemically fundamental.<sup>17</sup> Unfortunately, most philosophers just assume we have sensations and on the basis of this assumption they proceed to build up their own cognitive theory without any account of how we are able to have sensations at all. We, like Simon, want to know: *How do sensible species even come to act and be present in our faculties?*

The Thomist doctrine brings into relief two distinct modes of immutation, and “this double effect calls for a double system of influence.”<sup>18</sup> The sensible quality of some reality acts both as a *thing* and as a *species*. When the heat causes the garment and my hands to warm up we have a physical change that involves a heteronomic passion, transitive action, and subjective union, but concurrently the same heat is also *sensed* by my tactile faculties as warm. How is this phenomenon to be explained causally? Certainly by some *species*, but where did it come from? Are *species* caused by things in reality or are they a construction of the sense faculty?

Simon warns us not to make the mistake of burdening *species* with what is proper to *things*, and *things* with what is proper to *species*. We should not sell short the activities that are the privilege of *species*, which is to represent, by attributing them to things, which do not represent.<sup>19</sup> The difficulty for us today is that the majority of philosophers and scientists believe that the battle over the realism of secondary qualities was lost long ago.<sup>20</sup>

16. See Simon, *Essay on Sensation*, 70–71 and 73.

17. *Ibid.*, 75.

18. *Ibid.*, 76.

19. *Ibid.*

20. For recent arguments to the contrary, see Christopher Decaen, “The Viability of Aristo-



In other words, the predominant assumption is that colors and sounds can be entirely explained through electromagnetic radiation and mechanical percussions of various things in motion. But this view, despite the sophistication of its contemporary presentations, makes glaring category mistakes and incredulous causal inferences. Any view that contends that intentions emerge from entirely non-intentional bodies, i.e., from brute matter there arise *species*, will ultimately eliminate all sensible phenomena in favor of physical mechanisms, i.e., non-sensible phenomena. After giving up reality as intrinsically knowable, what often follows is the reduction of all our epistemological theories to anti-realism and skepticism.

Indeed this is precisely the well-known historical path taken from Galileo to Kant. The mysterious problem of how information is communicated through a medium is not made any less mysterious by reducing all acts of sensation to the stimulation of what is philosophically assumed to be the really real—such as the non-informative radiant or chemical energy—simply because it admits of quantifiable measurements and satisfies the *petitio principii* of various dogmas of empiricism. A reductionist mechanical account of reality and sensation is not only mysterious, it also asks us to assent to the impossible. It leaves entirely unexplained a fundamental feature of human cognition, namely, veridical sensations across a medium, which is the putative initial data from which all empirical investigations begin.<sup>21</sup> Such an account leaves inexplicable how intentional sensorial acts could result from non-intentional mechanical stimulation.<sup>22</sup> Scientists should either accept anti-realism and the sensory skepticism, which rationally

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telian-Thomistic Color Realism," *The Thomist* 65, no. 2 (2001): 179–222; Gabriele De Anna, "The Simple View of Colours and the Reference of Perceptual Terms," *Philosophy* 77, no. 299 (2002): 87–108; William Wallace, "The Measurement and Definition of Sensible Qualities," *The New Scholasticism* 39, no. 1 (1965): 1–25; Bernard Lonergan, *Insight: A Study of Human Understanding*, edited by Frederick E. Crowe and Robert M. Doran, Collected Works, vol. 3 (Toronto: University of Toronto Press, 1992); Gibson, *Senses Considered as Perceptual Systems; Ecological Approach to Visual Perception*; Alva Noë, *Perception in Action*; Casey O'Callaghan, *Sounds*. For a recent collection of essays on the debate, see *Primary and Secondary Qualities: The Historical and Ongoing Debate*, edited by Lawrence Nolan (Oxford: Oxford University Press, 2011).

21. See Wallace, "The Measurement and Definition of Sensible Qualities," 4–5ff.

22. "It is sometimes said that mechanical philosophers like Hobbes reduce all perception to the tactile, but this is not true; they reduce it to mere impulse and striking, and then they cannot explain how the impact can become an appearance. They have to say that the brain constructs the seeming. The problem would be less intractable if they did reduce the other senses to touch, because touch does involve appearances." Sokolowski, *The Phenomenology of the Human Person*, 201 n. 9.



follows from their conceptions of primary and secondary qualities, or reject the category mistakes and confused conceptions of sensible qualities found in Galileo, Hobbes, Locke, *et al.*, and begin afresh.

It is not the purpose of this paper to refute the paths that lead to skepticism, but to suggest an alternative approach to the nature of sensible qualities in reality and how they are able to incept acts of sensation by their intentional presence and communication through a medium. Simon provides us with a fine summation of the alternative approach taken by medieval Aristotelians.

Few philosophers went deeply into this problem of causality. Among these few, some maintain that the things of nature, over and above causal ways proportionate to their own mode of being, enjoy a participation in the causal ways proper to spiritual substance. In the present state of the question, the most urgent task is to understand precisely why such a daring theory was ever needed.<sup>23</sup>

Simon is referring to the philosophical accounts of Averroes, Aquinas, and Cajetan. Averroes seems to find this problem as perplexing and as important as Simon. Following his own brief treatment Averroes admonishes us: "You ought to give this consideration, since it requires investigation."<sup>24</sup> What is the problem?

Within Aristotelian natural philosophy it would seem that a pure physical alteration by a sensible quality is not sufficient to cause an act of sensation; it can only stimulate our organs. Some higher power is required to bring about such proto-immaterial intentional immutations in the sensible environment. What needed to be clarified was the twofold action of natural and intentional immutations.<sup>25</sup> Specifically, how is the sensible object capable of acting on the medium or other bodies through a mode of immutation that is proper to separate substances?

According to Aquinas the *species* are introduced into the medium by things that participate in an activity proper to the separate substances, namely, the activity of intentional immutation. It is often found that low-

23. Simon, *Essay on Sensation*, 77.

24. Averroes, *Averroes (Ibn Rushd) of Cordoba. Long Commentary on the De Anima of Aristotle*, translated with introduction and notes by Richard C. Taylor with Thérèse-Anne Druart, subeditor (New Haven: Yale University Press, 2009), II. sec. 60 (commenting on Aristotle, *De anima* 2.5, 418b22).

25. On the history and use of the term *intention* in this context, see also Tellkamp, "Aquinas on Intentions in the Medium and in the Mind" and Klubertanz, "*De Potentia* 5.8: A Note on the Thomist Theory of Sensation."



er natures participate in something of higher natures, as some nonhuman animals are said to partake in activities akin to prudence in humans. This mode of immutation allows bodies to diffuse similitudes of their form into the medium; such forms are the spiritual intentions that act on our sense powers and intellect. In perhaps his longest treatment of the problem, Aquinas writes,

We must remember that a body has a two-fold action. It has one action according to the property of a body, namely, its action through motion (for it is proper to a body to move and act after it has been moved). It has another action, according as it approaches the order of separate substances and participates somewhat of their way. Thus, lower natures usually participate in something of the proper character of higher natures, as we see in some animals which share in a kind of likeness to prudence which is proper to men. This second action is the action of a body, which is not directed to the transformation of matter, but to a certain spreading of the likeness of a form in medium. This latter is like the spiritual intention which is received from a thing in sense or intellect [*diffusionem similitudinis formae in medio secundum similitudinem spiritualis intentionis quae recipitur de re in sensu vel intellectu*]. This is the way in which the sun illuminates the air, and color multiplies its likeness [*species*] in the medium.

But both these ways of action in sublunary bodies are caused by the heavenly bodies. For fire by its heat changes matter, through the power of the heavenly body; and visible bodies multiply their likenesses in the medium through the power of light, whose source is in the heavenly body.<sup>26</sup>

Aquinas's account of the medium is not entirely transparent.<sup>27</sup> It is not clear whether there is simply a sort of resemblance involved in such participations, as we find in other animals, like dolphins, which engage in rather elaborate calculations and stratagems akin to the activities of humans, or is it the participation based on the extra causal influence of the higher on the lower? Are sensible qualities able to impose intentional forms into the medium, or can they only do this through the influx of a superior order of causality not native to their essence? We will return to Aquinas's account, but before we address this problem we should first listen to what Cajetan has to say on such matters.

Cajetan emphasizes that the distinction between *esse naturale* and *esse intentionale* constitutes a diversity in modes of *being*, and not in a diversi-

26. Thomas Aquinas, *De potentia*, q. 5, a. 8, translation from Klubertanz, "De Potentia 5.8: A Note on the Thomist Theory of Sensation," 323.

27. See Simon, *Essay on Sensation*, 77–79 n. 31; *Metaphysics of Knowledge*, 104–106 n. 25.



ty of essences, like that between whiteness and sweetness. This is crucial because *like causes like*, and diverse natures cannot produce something essentially other than themselves. Color, which we take for granted as being *real*, is the cause of its intentional forms.<sup>28</sup> But even this distinction is not sufficient to resolve the medieval difficulty. The problem remains because intentional forms, as at least *quasi-immaterial*, seem to be nobler than the physical forms, and the less noble physical form cannot produce the more noble intentional form.<sup>29</sup> So what is the cause of the intentional form in the physical reality? Is the *thing* itself the cause of its intentional presence in the medium?

Cajetan contends we must hold that the cause is the sensible object itself, because the sensible object is able to cause a *per se* act of sensation by communicating an intentional form into the power; its ability to communicate such intentional forms is manifest in such phenomenon as the production of a color's intentional form in a mirror. The proximate efficient cause of a sensible form as an intentional being must be the form of the thing itself. Nevertheless, the primary and principal cause—which the sensible thing participates in—is a separate agent.<sup>30</sup> Notwithstanding any advances Cajetan might have gained for us on this problem, Simon notes that, “The state of the question has not much improved since the time of Cajetan, except inasmuch as we are no longer tempted to burden intentional forms with subtle duties of a physical character, or to attribute to the sun, or to the heavens, semi-spiritual faculties. The final advice of Averroes remains as timely as ever.”<sup>31</sup>

Cajetan's answer maintains Aquinas's distinction between acts proper to the physical being and acts it carries out through participation in the acts proper to separate substances. But this does not seem to get us much further. What kind of participation is involved? Do physical things produce the intentions that are communicated into the medium or not? I think even a cursory summation of Yves Simon's detailed account will reveal that he was able to make a few advances in articulating both the difficulties and,

28. See Decaen, “The Viability of Aristotelian-Thomistic Color Realism.”

29. In his “*De Potentia*, 5.8: A Note on the Thomist Theory of Sensation,” Klubertanz presents a dissenting position against the interpretations of Aquinas provided by Cajetan, Simon, and Maritain. However, this is not the proper forum for evaluating and dismantling Klubertanz's misdirected criticisms.

30. Simon, *Essay on Sensation*, 79 n. 31.

31. *Ibid.*



at least, an outline of some answers to the problem of intentions in the medium.<sup>32</sup>

### V. Simon on Transitive Intentional Acts

We have already noted Simon's insistence on the confluence of the physical presence of the object's transitive action along with the act of sensation. The *species*, he writes,

must itself be produced by the physically present object. The "sense impression" cannot be taken for granted. The familiar ways of physical causation account for the alteration of an organ by stimuli, but the thing which acts as stimulus also plays the part of object: the problem is to determine by what ways physical things, in the exercise of their presence and of their transitive action, bring about the means of objective unions which involve the physical presence of the things objectively united with the senses.<sup>33</sup>

Simon brings to our attention that there still must be more involved than the natural transitive act of the physical object and immanent intentional act of sensation. The action of the sensible object must involve a transitive action which is manifested according to the order of nature *and* intention. In other words, in any act of sensation there will be two transitive acts—one natural and one that is intentional—and one immanent intentional act. This additional act—a *transitive intentional act*—might seem superfluous, but Simon's account is particularly instructive as to why it is essential for a realist account of sensation.

Stating the issue as precisely as possible, let us say that the thing considered to be an object of the external sense can be looked at as the principle of three kinds of actions. First, as a particular thing, the sensible exercises a *transitive material action* on the sense organ, considered as a physical receiver; and the result is a modification of the organ. Second, as an *object* acting intentionally upon the sense faculty, the sensible concurs in the *immanent action* of knowing. But this second kind of action, arising out of the intentionality of the object, is not enough to put the sense faculty in touch with the *physical existence* of the object. For this to happen, a third action is required, which, although it proceeds from the physically existing object, is not a physical but an intentional action, conveying not the object's quality but its existence. Beyond the immanent action of sensing, then, of which

32. Simon, *Metaphysics of Knowledge*, 91–112.

33. *Ibid.*, 79.



it is the co-principle along with the sense faculty (just as the object of thought is, along with the understanding, the co-principle of thought), the sensory object, to make itself present to the sense faculty in its existential reality and to cooperate with it, intentionally, in an act of genuinely experimental knowledge must also exercise on the sense faculty an *intentional transitive action*.<sup>34</sup>

In addition to the sensible object's natural communication of its form it also intentionally communicates its essence-structured activities into the medium through a transitive apsyche intentional act. The sensible object transitively acts on both the psychological sense faculty as well as its physiological substrate. The psychological faculty is activated by this intentional transitive act which communicates the sensible *species* into the sense faculty itself. In other words, the form is not merely present to the sensor in a strictly non-cognoscible natural way, for the transmutation of mechanical to electro-chemical energy of afferent nerves is not sufficient to activate a cognitive act; the initial intentional transitive activation makes the sensible form present *in* the sense faculty in an intentional and potentially cognoscible way.<sup>35</sup> The intentional transitive action, like its natural counterpart, terminates in the other, but whereas the natural immutation results in a subjective union, the intentional transitive action allows for an intentional or objective union through the immanent action of the sense faculty's operation. It is the intentional effect of the *species*, and not the natural effect of the *thing*, that begets the intentional immanent action of the sense faculty.

34. Simon, *Metaphysics of Knowledge*, 93. Emphasis in original. It is this account of sensation that is unfortunately neglected in John Knasas's critique of the epistemological realism of Simon and Maritain. See John F. X. Knasas, "Yves R. Simon and the Neo-Thomist Tradition in Epistemology," in *Acquaintance with the Absolute: The Philosophy of Yves R. Simon*, edited by Anthony Simon (New York: Fordham University Press, 1998), 83–100. Whereas Knasas focuses thematically upon Simon's analogies with memory and sensation, he could have instead found the sort of self-validation of sense realism he was looking for in Simon's account of *intentional transitive action* of the sensible *species*. Further, it also seems that Knasas's "alternative" account of the amplitude of cognitive reception of form over matter finds a complementary account in Simon's treatment of *intentional immanent action* and *autonomic passions*, i.e., the *maintenance* of the form received into a form rather than the *displacement* of a contrary form by the received form. In short, there are more similarities in the doctrine of sense realism found in Maritain, Simon, Gilson, Owens, and Knasas than is commonly found in more recent scholarship. But this contention cannot be justified here.

35. See Sokolowski, *The Phenomenology of the Human Person*, chaps. 12–14; Hacker, *Philosophical Foundations of Neuroscience*; Gibson, *Senses Considered as Perceptual Systems*, chaps. 1–3, 10, 12–13; *Ecological Approach to Visual Perception*, chaps. 3–8.



What we must insist upon at this point is that the intentional transitive action, which is all that goes on in the preparatory phase of sensation, and in which the sense faculty is totally passive, does not cease when the faculty, stirred into initial act, joins with the intentionally present object in the full exercise of the act of cognition.<sup>36</sup>

Without the effect of the intentional transitive action, which makes the sensible form exist *qua species* in the sense faculty, we would be forced to postulate that on the basis of the natural transitive action, the act of sensation generates its own *species*—in some neurophysiological-*cum*-Kantian way—or else take refuge in some variety of occasionalism. The apparent ontological parsimony found in these latter two idealist asylums commits its committed enthusiasts to principles that entail the absurd and fail to provide any explanation of the real. As Simon notes,

there is absolute irreducibility between intentional transitive action and physical action. Refine the notion of physical action as much as you like, by lightening it, making it invisible, calling it impalpable, and appealing to the unobservable (and often fictitious) entities talked about in modern physics, and you will still have an action that alters the subject that receives it, and that remains therefore, from the ontological point of view, infinitely remote from an action that in communicating an objective quality does not alter its subject. Between becoming *other* and becoming *the other*, the contrast is absolute, exactly as between physical action and intentional action.<sup>37</sup>

The presence of *species* in the sense faculty as the term of the intentional transitive action of the sensible does supply us with an account of *how the sense impression is able to exist in the sense faculty*. But it also explains why Thomist realism can be so insistent that in cognition we are intentionally actualized by the existence of the real.<sup>38</sup> The immanent act of external sen-

36. Simon, *Metaphysics of Knowledge*, 112. "Because this union will ultimately be effected by the soul, this original influence that the object exercises on the knowing faculty cannot be reduced to ordinary causality. And so, even though it is a physical action, it deserves to be called *intentional* action because it is *essentially* designed to give rise to an intentional union. For what the action of the object impresses upon the faculty physically is only the idea [Simon's preferred translation of *species*] in which the object itself is present in a sleep-like state and ready to awake as soon as the soul communicates its own vitality to it. The subjective reception of the idea thus fecundates the faculty and supplies it with everything it needs to move to its terminal act, which will coincide with the awakening of the object present in the idea." Simon, *Metaphysics of Knowledge*, 108–109. Emphasis in original.

37. *Ibid.*, 96.

38. Hence, contrary to some of his critics, Simon quite clearly affirms a thesis that is also cen-



sation terminates in a *species*—an intentional content—which is *other* and whose existence is present in and to sensation, not by any act of sensation itself, but by the transitive intentional act of the existing sensible reality.<sup>39</sup>

And so, we have to conclude that the influence exercised by the physically existing object is necessary not just to produce the union of its idea with the faculty but also to preserve that union. The sensation will persist only as long as this influence

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tral to the epistemological accounts of Étienne Gilson and Joseph Owens. See Étienne Gilson, *Methodical Realism: A Handbook for Beginning Realists*, translated by Philip Trower (Front Royal, Virginia: Christendom Press, 1990; reprinted by San Francisco: Ignatius Press, 2011); *Thomist Realism and the Critique of Knowledge*, translated by Mark A. Wauck (San Francisco: Ignatius Press, 1986); Joseph Owens, "Aquinas on Cognition as Existence," *Proceedings of the American Catholic Philosophical Association* 48 (1974): 74–85. Let us also note here Gilson's prefatory remarks in his *Methodical Realism* (p. 10): "The essays that follow and most of which have already appeared in various journals are gathered here only to deter a wish conveyed to me by Mr. Yves Simon. May he allow me to express my gratitude and also to share with him in the responsibility, not for the ideas contained in these essays, but for a publication of which, without him, I would not have thought."

39. Maritain's own presentation of this doctrine is too fine to summarize: "[T]he object of external sense, on the contrary, is not grasped in a word or image, but just as it exists outside the mind, in the very extramental action of the thing on the sense: *sensus secundum actum sunt singularium quae sunt extra animam* (St. Thomas, *In de Anima*, lib. II, lect. 12), *sensatio terminatur ad res prout extra sunt* (John of St. Thomas, *Phil. Nat.*, III. P., q. 6, a. 11 and 4). This is to say that, inasmuch as sensation is not a transient action, but an immanent action that is completed in the sense, the term of sensation just like the term of every immanent operation, a term that is contemplated or loved, but not produced, exists in the subject itself, *in ipso operante*. Sensible reality, on the other hand, is in the sense—by its transient action, *actio in passo*—just as it is outside the soul. Sensation, then, while terminating in the sense, terminates in the sensible thing as it exists outside, *prout est extra*, in the thing's very action upon the sense. And the actual existence, outside the knowing subject of the thing present in it through its action, is one of the constitutive conditions of the object of the sense as such. The entirely immanent act of sensation, at the beginning of which there is the *species impressa*, has a term, an object, which implies the actual existence of the thing within its own very objectivity—so much so that in the absence of a thing actually given through its action—(even if a star has ceased to exist at the moment the light reaches us, it is at that moment present by its action)—a sensation properly so called (I do not mean an imaginative perception or a hallucination) is absolutely impossible.... By giving precision to the scholastic theory of sensation in this fashion, i.e., by admitting that the sense's intuition bears upon external reality itself, grasped not from the point of view of nature or essence (for that is the intellect's proper object, but *according as it actually acts* on the sense by its qualities or as it exists outside *in its action* upon the sense (an action that is something real but accomplished in the organ), there is little difficulty in replying to the main objections derived from 'errors of the senses' (the broken stick in water, Doppler's effect, etc.). The sensible quality is perceived, in fact, *as it exists in the action* the body exercises through it and at the instant it reaches the sense after being transmitted through a medium (external or internal). The thoroughly realistic value of sense-perception and, at the same time, the *relativity* it entails—because of the materiality with which it is bound—are thus at one stroke safeguarded." Maritain, *The Degrees of Knowledge*, 125–26 n. 108. Emphasis in original.



is exercised. This is not like the case of the universal, whose form once impressed in the soul stays there and is forever ready for an intentional union with it. The singular sensible exists outside the soul, and the soul can be united to it only under the influence of its external reality.<sup>40</sup>

The medium provides an avenue for the intentional transitive act of the sensible reality. It is through this instrumental role of the physical medium that the sensible object is able to activate the immanent act of sensation by the communication of *species* through the medium. Like the intentional transitive act of the sensible object, the instrumental causality of the medium requires that the *species* in the medium exist intentionally.<sup>41</sup>

Before moving on to the next section, let us take note of a few additional explanatory features that this account of natural and intentional transitive action has with respect to the often-misunderstood distinction between sensation and perception and their physiological processes, that is, the stimulus energy or material causes that undergird these intentional immanent acts. Sensation is the core of perception for human beings.<sup>42</sup> Through a *transitive intentional act* and an *immanent intentional act*, sensation makes consciously present *per se* or *essential sensibles*, whereas perception involves the apprehension and judgment of *per accidens* or *incidental sensibles*. Perception enlists the cogitative power and the intellect which bring

40. Simon, *Metaphysics of Knowledge*, 112 and 89–91 n. 9. N.B. Simon prefers to use “idea” for the Latin term *species* (see Simon, *Metaphysics of Knowledge*, appendix), just as Maritain prefers to use “presentative form” or “objectifying form” (see Maritain, *The Degrees of Knowledge*, 123 n. 102). Maritain also has a very fine treatment of species and signs in “Sign and Symbol” in Jacques Maritain, *Ransoming the Time*, translated by Harry Lorin Binsse, (New York: Charles Scribner’s Sons, 1941), chap. 9, 217–54, esp. 218–26.

41. See Simon, *Metaphysics of Knowledge*, 102–103. What Thomists need today is a more perspicuous account of instrumental causality and its various manifestations. A comprehensive treatment of instrumental causality would not only help us understand how intentions present in an psychic medium can communicate the sensible and quidditative character of things to psychic powers but would also contribute to our appreciation of the secondary causality found in created natures through the divine power and the instrumental role of the phantasms in intellectual abstraction. See Simon, *Metaphysics of Knowledge*, 122–26. Due to considerations of space, I have not taken up Simon’s and Cajetan’s discussions of instrumental causality in the medium as well as of the progressive immaterialization of the intentions from the sensible form, to the medium, to the act of sensation, to phantasms, and finally, to completely abstract *species intelligibilis*. See Simon, *Metaphysics of Knowledge*, 101ff. For more recent studies on this progressive immaterialization of intentions, see Hoffmann, “St. Thomas Aquinas on the Halfway State of Sensible Being”; Burnyeat, “Aquinas on ‘Spiritual Change’ in Perception”; and Tellkamp, “Aquinas on Intentions in the Medium and in the Mind.”

42. See Simon, *Essay on Sensation*, 56–58; 79–82.



our conscious attention to bear upon the identity (primary substance) and quiddity (essence) underlying the sensible manifold of accidental beings. Through the cogitative power we are able to *perceive* a sensible phenomenon as more than a white shaped magnitude in motion, but as *this man*.<sup>43</sup> Both sensation and perception are conscious acts and both make present what James Gibson would describe as “stimulus information”<sup>44</sup> of an “invariant object” or what Robert Sokolowski would describe as an “identity within the manifold.” What is not intentional or conscious are the *natural transitive acts* which involve the neurophysiological substrate of our external sense faculties, the *sensus communis*, and the cogitative power. The interactive stimulation of electrochemical energy through our afferent and efferent nerves is an entirely non-cognitive process. If we were to reduce all sensory or perceptual cognition to the stimulation of nerves we would be left with the puzzle as to how the continuous flux of electrochemical stimulation is able to present a constant invariant intentional content, and *a fortiori* how it can present the non-cognitive as cognitive (i.e., to make *things* into *species*). But on Simon’s Thomist account it is the intentional transitive acts of things which make present invariant objects, that is, *species*, amidst the informed flux of varied stimuli, that is, the natural immutations of things. More recently, psychologists like James Gibson have also recognized the significance of this problem.

The stimulation of receptors ... are variable and changing in the extreme... The unanswered question of sense perception is how an observer, animal or human, can obtain constant perceptions in every day life on the basis of these continually changing [stimuli]... The active observer gets invariant perceptions despite varying [stimuli]. He perceives a constant object by vision despite changing [stimulations] of light; he perceives a constant object by feel despite changing [stim-

43. See Thomas Aquinas, ST I, q. 17, a. 2; q. 78, a. 4; *In De anima*, 2.13; Cyrille Michon, “Intentionality and Proto-Thoughts,” in *Ancient and Medieval Theories of Intentionality*, edited by Dominik Perler (Leiden: Brill, 2001), 325–42; Daniel De Haan, “Linguistic Apprehension as Incidental Sensation in Thomas Aquinas,” *Proceedings of the American Catholic Philosophical Association* 84 (2011): 179–96; Cornelio Fabro, “Knowledge and Perception in Aristotelico-Thomistic Psychology,” *The New Scholasticism* 12, no. 4 (1938): 337–65; George P. Klubertanz, *The Discursive Power: Sources and Doctrine of the Vis Cogitativa According to St. Thomas Aquinas* (St. Louis, Missouri: Modern Schoolman, 1952).

44. “Different stimulus energies—acoustical, chemical, and radiant—can all carry the same stimulus information. The equivalence of different “stimuli” for perception and behavior has long been a puzzle, but it ceases to be puzzling if we suppose that it results from equivalent stimulus information being carried by different forms of stimulus energy.” Gibson, *Senses Considered as Perceptual Systems*, 55.



ulations] of pressure; he perceives the same source of sound despite changing [stimulations] of loudness in his ears. The hypothesis is that constant perceptions depend on the ability of the individual to detect the invariants, and that he ordinarily pays no attention whatever to the flux of changing sensations.<sup>45</sup>

The peculiar character of a thing's intentional transitive acts is not easily eliminated by any principle of parsimony that also respects more fundamental epistemic principles of intelligibility. Theoretical parsimony is worthless without verified intelligibility. To entirely reduce the world to non-cognoscible things, is to eliminate the possibility of explaining why the world is intrinsically intelligible and admits of inquiry, exploration, investigation, speculation, extrapolation, and all other modes of scientific and philosophical questioning, all of which presuppose an initial act of wonder in the presence of the intelligibility of being.

#### VI. The Vocation of Intentional Beings in Sensible Things and the Medium

In the last section we discussed the natural and intentional transitive acts of physical things. But what is the purpose of this duality found within transitive acts of sensible realities? Why do sensible bodies emanate their form both naturally and intentionally? Intentional acts are proper to higher separated beings, not to physical beings; the existence of intentions in physical things and the medium seems to be superfluous to the nature of corporeal beings. According to Simon,

The [*species*] has physical being, and goodness, not for its own sake but exclusively as an intentional medium whose union with the faculty derives its entire *raison d'être*, with nothing left over, from the intentional union of the faculty and the object. And because of that, transitive action of the object on the faculty and the corresponding passion in the faculty in relation to the object are, by virtue of their essential purpose, something quite different from ordinary action and reception, which always result in the constitution of a composite. The immediate effect of

45. Gibson, *Senses Considered as Perceptual Systems*, 3. Elsewhere, Gibson writes: "Just as the stimulation of the receptors in the retina cannot be seen, so the mechanical stimulation of the receptors in the skin cannot be felt, and the stimulation of the hair cells in the inner ear cannot be heard. So also the chemical stimulation of the receptors in the tongue cannot be tasted, and the stimulation of the receptors in – the nasal membrane cannot be smelled. We do not perceive stimuli." Gibson, *Ecological Approach to Visual Perception*, 55. See Hacker, *Philosophical Foundations of Neuroscience*, 121–47, especially his criticism of David Marr's theory of vision, pp. 143–47.



the action of the object on the sense is simply to disengage from the potentiality of the sense a form that will determine that potentiality. But this is an intentional form affected to the very depths of its physical reality by what may be called its intentional vocation.<sup>46</sup>

But why do *species* have an intentional vocation at all? Jacques Maritain has provided a cogent answer to this very question. We should not assume that all things in creation act only for their own sake. Once we recognize this, it becomes clear that the intentional vocation of physical *species* is not superfluous with respect to the whole order of being.

Examine everything entitative about the medium that transmits sensible quality and you will only find the properties and movements—the wave movements and others—that the physicist sees in them. You will no more find quality there than you will find the soul under the scalpel. Yet quality passes through it, *secundum esse intentionale*, since the sense will perceive it when the wave or vibration reaches the organ. It is like a dream of a materialistic imagination to want, with Democritus, to have quality pass through the medium entitatively, or, since it is not there entitatively, to deny, with the votaries of modern “scientism,” that it could pass through it at all. Even when *esse intentionale* has nothing to do with the world of knowledge, it is already a way for forms to escape from this entombment in matter.<sup>47</sup>

The true philosophy of nature honors the mystery of sensorial perception; it knows that such perception takes place only because the immense cosmos is activated by the first Cause whose motion passes through all physical activities so that, at the higher reach where matter awakens to *esse spirituale*, they may produce the effect of knowledge upon an animated organ.<sup>48</sup>

Like Maritain, Simon also recognizes that, “nature anticipates cognition by producing a universe of intentional forms outside the realm of the soul to provide the soul with what the soul needs to ‘become all things.’”<sup>49</sup> But what accounts for this generosity of material natures?

These material natures cannot be the ultimate efficient cause of a mode of existence which exceeds their own nature. “[T]he production of intentional forms by the sensible objects . . . presupposes a participation on their part of some kind of higher efficient power.” God not only gives to material things the causal efficacy to produce effects proper to their nature, “God

46. Simon, *Metaphysics of Knowledge*, 108.

47. Maritain, *The Degrees of Knowledge*, “Critical Realism” § III. 22. [V], 122.

48. Jacques Maritain, *Philosophy of Nature*, translated by Imelda C. Byrne (New York: Philosophical Library, 1951), 84.

49. Simon, *Metaphysics of Knowledge*, 103.



also communicates to them an additional efficacy, designed specifically to make them known to beings who are deprived of innate ideas and who are at once material and cognitive.”<sup>50</sup> It is here that we find Simon’s benign interpretation of the participation of sensible things in separated substances, an interpretation that frees Aquinas’s doctrine from any associations it might have had with the older cosmology. Unfortunately for us, Simon does not go into detail on the way in which sensible things participate in divine causality. Nonetheless, Maritain’s and Simon’s remarks on the vocation of *species* as intentional beings does suggest a possible route for further inquiry. In the next and final section of this study we will attempt to amplify Simon’s account of sensible things’ participation in divine causality by appealing to Aquinas’s doctrine of the transcendentals.

### VII. The Transcendentals: Thing and Truth as Sensible Realities and Intentional Beings

Aquinas’s appeal to the participation of sensible things in separate substances to account for intentions in the medium should not surprise us, and Simon’s interpretation of this account is no doubt accurate. Simon writes, “the endowing of things with the power of intentional as well as physical causality is but the counterpart to or the complement of the creation of animals and of man. It may well be paradoxical, but it is no more so than this participation in the divine infinity granted with the gift of knowledge to angel, man, and the lowest of the beasts.”<sup>51</sup> There are many different modes of participation found within the created order that contemporary Thomists, Platonists, and neo-Aristotelians accept with little hesitation. Placing the problem of the intentional transitive act of sensible things within the context of a metaphysics of participation provides a robust ontological foundation for our problem. In what way do the activities of sensible things manifest a kind of participation in separated substances?

Separated substances only interact with one another at the order of intentional immutation; the communication of one form to another by

50. Ibid., 104–105. “What has to be explained here is an effect belonging to an order higher than the whole physical order. As it exists in the inanimate medium, the sensible form, which obviously does not yet possess there an *Erkannt-Sein*, must already be at least an *Erkenntnisbild*, a kind of virtual idea destined to bring about an act of knowledge.” Ibid., 103.

51. Ibid., 106.



intentional being is proper to their immaterial mode of being.<sup>52</sup> Sensible bodies only *partake* of this sort of activity; it is not characteristic of material substances as such. But just as all creatures participate in their act of being (*actus essendi*)—since the act of being is not proper to any creature's essence as such—so also do all creatures participate in being as truth. In order to make this kind of participation clear, we will need to present a brief explication of Aquinas's doctrine of the transcendentals.

The doctrine of the transcendentals offers a helpful clarification of Aquinas's introduction of participation into his account of intentions in the medium. Two transcendental aspects of being appear to be especially pertinent to Aquinas's distinction between natural and intentional immutation. First, the transcendental thing (*res*), which highlights that every thing that is, has or is its essence, quiddity, or *ratio*,<sup>53</sup> and second, the transcendental truth (*veritas*) which directs our attention to the conformity of all being to cognition.<sup>54</sup>

The transcendental truth cuts two ways. Human cognition must be conformed to the essence or quiddity of the existent thing in order for truth to be obtained. But the reality that is the measure of our minds also has its own more fundamental measure. The created order of existent essences also conforms to the divine intellect, where all created essences find

52. See Thomas Aquinas, ST I, q. 56, a. 2, ad 3; q. 107, a. 1; Harm Goris, "The Angelic Doctor and Angelic Speech: The Development of Thomas Aquinas's Thought on How Angels Communicate," *Medieval Philosophy and Theology* 11, no. 1 (2003): 87–105.

53. "... non autem invenitur aliquid affirmative dictum absolute quod possit accipi in omni ente nisi essentia eius secundum quam esse dicitur, et sic imponitur hoc nomen res, quod in hoc differt ab ente, secundum Avicennam in principio Metaphysicae, quod ens sumitur ab actu essendi sed nomen rei exprimit quidditatem vel essentiam entis ..." Thomas Aquinas, *Questiones disputatae De veritate* q. 1, a. 1 (Leonine, vol. 22.1:5.131–39). See Thomas Aquinas, *De ente et essentia*, chap. 2; *In I. Sent.*, d. 2, 1.5 ad 2; d. 8, 1.3; d. 33, 1.1 ad 1; ST I, q. 39, a. 3, ad 3.

54. "Convenientiam vero entis ad intellectum exprimit hoc nomen verum." Thomas Aquinas, *De veritate*, q. 1, a. 1 (Leonine, vol. 22.1:5.159–61). See Jan Aertsen, *Medieval Philosophy and the Transcendentals: The Case of Thomas Aquinas* (Leiden: Brill, 1998); "Res' as Transcendental: Its Introduction and Significance," in *Le problème des transcendants du XIVe au XVIIe siècle*, edited by G. Federici Vescovini (Paris: Vrin, 2002), 139–56; "Truth as Transcendental in Thomas Aquinas," *Topoi* 11, no. 2 (1992): 159–71; "Is Truth Not a Transcendental for Aquinas?" in *Wisdom's Apprentice: Thomistic Essays in Honor of Lawrence Dewan, O.P.*, edited by Peter Kwasniewski (Washington, D.C.: The Catholic University of America Press, 2007), 3–12; Joseph Owens, "Aquinas on Being and Thing," in *Thomistic Papers*, vol. 3, edited by L. A. Kennedy (Houston, Texas: Center for Thomistic Studies, 1987), 3–24; John F. Wippel, "Truth in Thomas Aquinas," *Review of Metaphysics* 43, nos. 2–3 (1989): 295–326; 543–67; reprinted in John F. Wippel, *Metaphysical Themes in Thomas Aquinas*, vol. 2 (Washington D.C.: The Catholic University of America Press, 2007), 65–112.



an exemplar—i.e., an intelligible pattern for creatable essences—inasmuch as they imitate the perfection of the divine essence.<sup>55</sup> In this respect all creatures participate, not only in *esse*, but also in *essentia*. We all partake in the pattern of being that God has intended for us to be; through each and every act we are becoming what our essence is to be.

And the very first thing which “to be” does, is to make its own essence to be, that is, “to be a being.” This is done at once, completely and definitively for, between to be or not to be, there is no intermediate position. But the next thing which “to be” does, is to begin bringing its own individual essence somewhat nearer its completion. It begins doing it at once, but the work will take time and, in the case of such corporeal beings as men, for instance, it is bound to be a slow process. It takes each of us a lifetime to achieve his own temporal individuality. True enough, essence itself is there from the very beginning, and, in a way, it is whole, but its wholeness is not that of a thing. The essence of the symphony is in the mind of the composer, and, since it is its essence to be a symphony, it will have to be it, but it will not exist until the last bar of its score has been orchestrated, and even that will not be the end of its becoming. So also with natural essences. Each of them is the progressive becoming of its own end. In short the actual perfecting of essences is the final cause of their existences, and it takes many operations to achieve it.<sup>56</sup>

Our essence is what we are striving to become as *things*, yet this same created essence is known by God, and to some degree by ourselves, as the *truth* of what we are, and as the *truth* that measures what we, say, as humans should become, and have often failed to be. With this robust metaphysical context of the transcendentals in mind, it is not unusual for all materially instantiated essences to communicate the quidditative principle of their being according to the order of the transcendentals thing and truth. Just as the formal communication of natural transitive immutation is the face of *thing*, so the intentional transitive immutation of the same form is the face of *truth* insofar as the intentionality of a physical essence is communicated into the medium through the natural existence of the physical essence as truth.

55. “[S]ic ergo intellectus divinus est mensurans non mensuratus, res autem naturalis mensurans et mensurata, sed intellectus noster mensuratus et non mensurans res quidem naturales, sed artificiales tantum. Res ergo naturalis, inter duos intellectus constituta, secundum adaequationem ad utrumque vera dicitur: secundum enim adaequationem ad intellectum divinum dicitur vera in quantum implet hoc ad quod est ordinata per intellectum divinum.” Aquinas, *De veritate* q. 1, a. 2 (Leonine, v. 22.1:9.93–102). See Aquinas, *In I Sent.*, d. 2, 1.3; ST I, q. 14, a. 8, ad 3; qq. 15–16; q. 44, a. 3; q. 84, a. 5; Suppl. III, q. 80, a. 4.

56. Étienne Gilson, *Being and Some Philosophers*, 2nd ed. (Toronto: Pontifical Institute of Medieval Studies, 1952), 184.



In short, all physical beings were created by God to be things in relation to themselves and truths for others, for the same material essence acts both naturally and intentionally by participating in the exemplar of that essence as it exists in the ideas of the divine intellect.<sup>57</sup> Accordingly, the doctrine of the transcendentals thing and truth brings into relief the cascading modes of participated being and immutation that essences take on through creation. Beginning with their principal existence as ideas in the divine intellect, such essences are also given natural existence as created physical things; but as truths, the essences of things are communicated through various media and take on a non-cognitive intentional existence as *species*; and finally, these essences take on the cognitional intentional existence of *species* or ideas received into cognitive powers.<sup>58</sup>

There are of course many more details that need to be spelled out to understand the specific modes of participation involved in the ways things and truths in the created order participate in the divine exemplars and how they communicate this to the world around them. This will have to be taken up in a future study. Nonetheless, it should be clear that the integration of the Thomist doctrine of the transcendentals thing and truth, with the doctrines of the intentional transitive acts of sensible things and the communication of the nature of things into the medium, does indeed provide a metaphysical structure for the doctrine of *species* in the medium and also frees it from its unnecessary associations with the older Aristotelian empirical physics and cosmology.

### VIII. Concluding Remarks

This paper has only grazed the surface of the philosophical issues that must be clarified with respect to sensation, metaphysics, and the medium, all of which are prerequisites to a proper and more complete treatment of

57. The transcendental truth is the underlying thread that Aquinas has woven throughout the participated perfections, i.e., natural essences, which lead us through the fourth way (ST I, q. 2, a. 3) to their presence as divine perfections (ST I, q. 4, a. 2), as divine ideas (ST I, q. 15), and divine truth (ST I, q. 16), which is causally related to our participated knowledge in the latter, through our knowledge of the material essences of created things (ST I, q. 14, a. 8, ad 3; q. 84, a. 5), which alone gives us the grounds for universal necessary knowledge of dynamic and changing material realities.

58. See Aquinas, *Quodlibet* 8, q. 1, aa. 1–2.



the problem of intentions in the medium. One must also deal with the veridicality of sensation itself, as well as investigate the precise causal relationship that obtains between intentions and the medium, while attending to the relevant discoveries of empirical science. Important questions also need to be addressed concerning privileged states of the medium, as well as what are the proper and optimum dispositions of the medium and the sensory organs that are required for properly functioning veridical acts of sensation.<sup>59</sup> These important problems cannot be addressed here.

In this paper I have attempted to make clear the way in which every sensible *thing* can be said to have an intentional vocation that is fulfilled in its essence-structured activities by which it will naturally and intentionally emanate what sort of thing it is. In other words, corporeal things leave vestiges of truth or *species* in various media in the environment by virtue of their transitive intentional acts. Such *species* are the only scent that is necessary for a rational being filled with a sense of wonder and a natural desire to know to seek out and understand the essence of things through their *species*. Inasmuch as rational beings come to recognize the participated character of such intentional immutations, they also will come to recognize the transcendental character of being, thing, and truth. And every Thomist knows that this road sets out on a direct path of increasing intelligibility towards the Being whose existence is what He is.

This preliminary study was intended to prepare the way for a more extensive future treatment of what Thomists like Simon and Maritain only began. Maritain once wrote that:

We think it would be of great interest to philosophers to study the role that *esse intentionale* plays in the physical world itself, wherein there undoubtedly arises from such existing, that sort of universal animation whereby motion puts into bodies more than they are, and colors the whole of nature with a semblance of life and feeling undoubtedly derived from it.<sup>60</sup>

I hope that this paper has at least generated some interest in further articulating the ways *esse intentionale* are present in the medium. And if we heed the call of Simon and Maritain, then we should recognize with

59. See Simon, *Essay on Sensation*, 83–91; Decaen, “The Viability of the Aristotelian-Thomistic Account of Color Realism,” 214–22.

60. Maritain, *Degrees of Knowledge*, 122.



them that a deeper understanding of the vocation of *species in medio* is of the utmost importance for the doctrine of sensation that is fundamental to Thomist realism.<sup>61</sup>

61. I must acknowledge the helpful corrections and suggestions that I received on earlier versions of this paper from Jörg Alejandro Tellkamp and Steven Jensen. I would also like to thank Anthony and Judy Simon for their kinds words at the 2010 American Maritain Association conference and for supporting the Yves R. Simon Graduate Student Award.