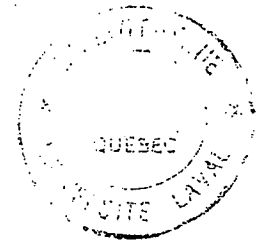


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FACULTY OF PHILOSOPHY

A THESIS
SUBMITTED TO THE GRADUATE SCHOOL
OF
LAVAL UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

by
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THE FUNCTIONS OF TOUCH

QUEBEC

November 1964

PROPOSITIONS DEFENDED

Rev. Thomas Feeley

1. Datur unus quidam communis sensus praeter proprias et
externas, qui discernit differentias sensibilibus unius
et plurium sensuum. (Cantin)
 2. Non est idem bonus civis et bonus vir. (Babin)
 3. In his quae fiunt non est dare ultimum instans sed
ultimum tempus. (C. De Keninck)
 4. Rhetoric is like the antistrophe to Dialectic. (Pqr Dienne)
 5. Temperantia est praecipue circa concupiscentias et
delectationes, consequenter autem circa tristitias quae
contingunt ex absentia talium delectationum. (Babin)
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INTRODUCTION

There is a twofold order of dependence among the powers of the human soul.¹ Since what is more in act and more perfect is naturally prior to what is less perfect,² the intellectual powers are prior to the others. Consequently, the intellect and will direct and command the sensory powers. Yet, since it takes time for a man to develop, the imperfect is prior to the perfect in the order of generation and time. In this way the vegetative powers are prior to the sensitive powers, for vegetative operations produce and maintain the sensory organs. Similarly the sensitive powers are prior to the intellect, for the senses present the intellect with its object³ and provide it with a basis for judging.⁴ Consequently, the senses condition intellectual operations. There is, likewise, an order of dependence among the senses themselves, and, as we will see later, touch, as the most basic, conditions both sensory and intellectual operations. This study investigates the influence of touch on the intellect, the senses, and the sense appetites.

What complicates this task is that St. Thomas had to explain the sense organs by the physiological theories of his time. Today these medieval theories seem hopelessly unsophisticated, yet we have to understand them. How else can we assess the extent of their influence and see clearly where his teaching must be modified? In fact, as this study attempts to show, those who have ignored the medieval physiology in

¹Sum. Theol., I, q.77, a.4c; a.7.

²For a discussion of the various meanings of the word "prior" cf. Cat., 12, 14a, 26 - 14b, 22.

³In Posti de Trin., lect. 2, q.2, a.2.

⁴Sum. Theol., a.24, a.3.

St. Thomas' doctrine on the senses have also misinterpreted his more properly philosophical explanations. Clearly understood, his philosophical analysis provides an ideal framework for modern physiology.

In spite of the difficulties, an examination of the functions of touch as St. Thomas saw them is not without value: understanding is its own reward. Besides, because touch is basic, its influence is far-reaching, especially in education. For teaching as an art not only imitates nature but cooperates with it.¹ Consequently, sound pedagogy must respect the dependence upon touch of the other powers, sensory and intellectual. The Montessori method of education, for example, gives ample scope to the child's desire to handle things and takes advantage of the tendencies of the child at different stages of sensory development.² This method can be considered as a development of the program of education in Aristotle's Politics.³ Furthermore, the influence of the natural hierarchy of powers extends even to teaching the sciences, for the need for sensory experience determines in large measure the order in which the sciences should be taught.⁴ Finally, touch is basic even to the sense appetites, and its role must be recognized for effective moral training. Since, therefore, the influence of touch is so extensive, it is worth our while to discover its various functions.

¹In de Sen. et Sens., lect. 1, n.16; De Ver., q.11, a.1c.

²E. Mortimer Standing, The Montessori Method: A Revolution in Education (Fresno: The Academy Library Guild, 1962), pp. 25-28, 36-53.

³Pol., VII, 17, 1336a, 4 - VIII, 7, 1342b, 33.

⁴In VI Eth., lect. 7, nn. 1209-11.

I. TOUCH AS BASIC TO UNDERSTANDING

It is the constant teaching of Aristotle and St. Thomas that the difference in intellectual ability among men is proportionate to the perfection of their sense of touch:

Et in genere hominum ex sensu tactus accipimus, quod aliqui ingeniosi sunt, vel non ingeniosi; et non secundum aliquem alium sensum. Qui enim habent duram carnem, et per consequens habent malum tactum, sunt inepti secundum mentem; qui vero sunt molles carne, et per consequens boni tactus, sunt bene apti mentis.¹

As in the text just quoted, St. Thomas usually is content to support his position in regard to touch with the easily verifiable sign that those whose flesh is very sensitive to touch sensations are more intellectually capable than those with coarse flesh and a duller sense of touch.² Besides this sign, however, he has also shown the necessity of this truth in his Quaestio Disputata de Anima.³ Since the argument is too long to quote in full, we will paraphrase it here.

Beginning with the dictum that matter exists for the sake of form, St. Thomas argues that the body exists for and is proportioned to the soul, and he calls attention to the fact that the soul is not only the form and mover of the body, but also its end. Furthermore, the human soul is lowest in the order of intellectual beings. Unlike the higher substances, it is not endowed by nature with intelligible species, but is only in potency to them. Consequently, in order to perform its proper operation, namely, understanding, the human soul must acquire its

¹In II de An., lect. 19, n.483. ²Sum. Theol., I, q.76, a.5c.

³a.8c.

intelligible species from external things by way of sensory powers which cannot function without corporeal organs. Therefore, not only must the human soul be united to a body, it must be united to a body that is most apt to present the intellect with sensible species, from which the intellect, in turn, produces its intelligible species. "Consequently, it is necessary that the body to which the rational soul is united be well disposed for sensing."

There are, of course, many senses; nevertheless, there is one which is the foundation of the others, namely, touch, upon which the whole sensitive nature rests as upon its basic principles. For because of this sense we call something an animal. Besides, when this sense ceases to function, as in sleep, then so, too, do all the other senses. Again, all the other senses cease to work not only because of an excess of their own proper object, as when we are blinded by too strong a light and deafened by too loud a noise, but also by being exposed to excessive heat or cold, which are proper sensibles of touch. Accordingly, since the body to which the rational soul is united must be well disposed for sensory operations and since touch is the most basic of them all, then the organ of touch must be especially suitable.

We find, in fact, that this is so. For man has a more discerning sense of touch than do the other animals, although his other senses do not always match those of the beasts. We find, also, that those men whose flesh is of finer quality and who have a good sense of touch are also intellectually more capable.

St. Thomas then explains why this is so in terms of the physiological theories of his time, according to which the organ of

touch was composed of the four elements but according to such perfect proportions that it could accurately discern the extremes of its proper sensibles. Since touch is the most basic sense, the human body must be most suitably disposed, and that requires that the body as a whole have a perfect proportion of the elements. Using the same physiological theories, he then attempts to show how the human body is best disposed for the functioning of the internal senses, which have their organs in the brain.

It might seem, however, that the very generality of St. Thomas' argument could also lead us to conclude that not only touch but all the senses would be superior in man to those of the animals--a conclusion contrary to experience. For in many respects man's senses of smell, sight and hearing are inferior to those of other animals,¹ as are his strength and speed and especially his instinct. To obviate such an objection St. Thomas appeals to matter as a principle of limitation, arguing that the deficiencies which appear when man's senses are compared to those of some other animals are due to the necessities of matter. For example, to make a saw, a craftsman chooses steel because it is hard and suitable for cutting; yet he knows that by its very nature steel rusts and becomes dull. So too each of man's sense organs is made of the kind of matter which is best adapted to its primary function of knowing, although this involves certain limitation "ex necessitate materiae."² Furthermore, because he has reason, which is

¹In *II de An.*, lect. 19, n.482. For a description of the organic structure of the senses and an account of the functional limitations of the senses in brute animals cf. Wolfgang von Buddenbrock, *The Senses*, trans. Frank Gaynor (Ann Arbor: The University of Michigan Press, 1958).

²*Q.D. de An.*, a.8c. "Et per istum modum---"

unlimited in its capacity, and hands, which are the instruments of reason and share in its versatility, man is not restricted to definite ways of acting, as the animals are, and does not need their keenness of smell or sight or hearing. Man's reason supplies for these defects in a more perfect way.¹ Understood in this way, man's body and sense organs are perfectly adapted to the soul and its operations.

In this passage St. Thomas does indeed show that the human body is proportioned to the rational soul. He adduces evidence to show that man's whole sensitive nature depends upon touch as upon its basic principle. Consequently, man's sense of touch must be better than that of brute animals, as it clearly is. But to explain how touch conditions sensation and intellection he resorts to the physiological theories of his day, which do not entirely clarify the problem. For they suggest that because touch is better, the whole sensitive nature is better; but they do not say how touch, as such, conditions sensation and understanding. Furthermore, if we substitute modern physiology in place of the antiquated theories that St. Thomas had at his disposal, and explain man's superiority over the animals, as well as the varying degrees of intelligence among men, in terms of a more highly developed nervous system, then there does not seem to be any evident reason why touch as such should condition intelligence more than any other sense. Nor should it be forgotten that St. Thomas himself considers sight and hearing to be especially important for intellectual knowledge.²

¹ Idem., ad 20m; Sum. Theol., I, q.76, a.5, ad 4m.; De Ver., q.22, a.7c.

² In de Sens. et Sens., lect. 2, nn. 25 - 32.

In addition to the passage just discussed, St. Thomas presents two arguments to show that mental ability corresponds to the refinement of the sense of touch and of no other. These proofs deserve consideration. He writes:

Sed dicendum est, quod duplici ex causa, bonitas mentis respondeat bonitati tactus. Prima ratio est, quod tactus est fundamentum omnium aliorum sensuum; manifestum est enim, quod organum tactus diffunditur per totum corpus, et quodlibet instrumentum cuiuscumque sensus est etiam instrumentum tactus; et illud, ex quo aliquid dicitur esse sensitivum, est sensus tactus. Unde ex hoc quod aliquis habet meliorem tactum, sequitur quod simpliciter habet meliorem sensitivam naturam, et per consequens, quod sit melioris intellectus. Nam bonitas sensus est dispositio ad bonitatem intellectus. Ex hoc autem, quod aliquis habet meliorem auditum vel meliorem visum, non sequitur quod sit melius sensitivus, vel melioris sensitivae simpliciter, sed solum secundum quid.¹

It should be remarked, first of all, that St. Thomas here opposes touch as the foundation of sensation to the proper senses and explicitly mentions hearing and sight, which are the most spiritual of the senses.² Secondly, he argues that touch is the foundation of all the other senses and so the better the sense of touch, the better the sensitive nature which the intellect can use. His argument, therefore, is based upon the priority of touch in the order of generation and nature and not upon the priority of touch in the order of knowledge as such.

This viewpoint is also brought out by the first reason given to show that touch is the foundation of all the other senses. "The organ of touch," he writes, "is diffused throughout the whole body and every instrument of every sense is also the instrument of touch." But, granted the truth of that statement, it is not clear what for St. Thomas might be the function of touch in the operation of these other senses. For touch demands conscious contact of the sensing body with the object

¹In II de An., lect. 19, n.484 ²Ibid., lect. 14, n.418

being sensed, or at least with a quality like heat, which is radiated from a body. To the extent, however, that we are aware of touch sensations in the eye, our vision is impaired; and this is true of smell and hearing as well. For, according to St. Thomas it is especially the sense of touch in these organs that causes pain: "Pain... follows upon the apprehension of sense, and especially of touch."¹ Touch, then, seems to be present in the organs of sensation not for their operation but rather for their preservation. Hence, at least in regard to the senses of sight, hearing, and smell, touch functions in the order of generation and nature.

The second proof that mental capacity depends upon the perfection of touch runs as follows:

Alia ratio est, quia bonitas tactus consequitur bonitatem complexionis sive temperantiae. Cum enim instrumentum tactus non possit esse nudatum a genere tangibilium qualitatum, eo quod est ex elementis compositum, oportet quod sit in potentia ad extrema saltem per hoc, quod est medium inter ea. Ad bonam autem complexionem corporis sequitur nobilitas animae: quia omnis forma est proportionata suae materiae. Unde sequitur, quod qui sunt boni tactus, sunt nobilioris animae, et perspicacioris mentis.²

Although we can't subscribe today to the explanation of the perfection of the body and of the organ of touch as a delicate combination of the four elements leaving the sense in potency to the extremes;³ nevertheless, the explanation brings us back to the fact that St. Thomas is again considering touch in the order of generation and as evidence of the perfection of the whole sensitive nature. In all these passages, therefore, St. Thomas seems to explain touch as conditioning intellectual capacity not so much as a proper sense but as the foundation of the

¹Sum. Theol., I-II, q.35, a.7c. ²In II de An., lect. 19, n.485.

³Ibid., lect. 23, n.548.

senses and as the basic property of animal nature as such.

These arguments of St. Thomas raise several questions. Is touch as basic to sensation distinguished from the proper senses of touch? If it is, what functions does it have, and what contribution do the proper senses of touch make to intelligence? If it is not, then it is hard to see how the proper senses of touch determine intellectual ability, especially since Aristotle and St. Thomas both claim that sight and hearing contribute most to our knowledge of things. Furthermore, it would seem from what has been said so far that the role of touch as basic to sensation is limited to the preservation and not to the operation of the proper senses. In this way touch conditions intelligence remotely. Is there, however, any way in which touch functions even in the operations of the proper senses? If there is, then touch conditions intelligence proximately. Before we can discuss these questions, however, we must first consider St. Thomas' theory of sensation.

II. ST. THOMAS' THEORY OF SENSATION

A. The Senses and Their Organs¹

The sense is a passive knowing power.² The sense is also an organic power inasmuch as it is a bodily organ or tool, such as the eye or the tongue.³ Each sense is distinguished from the others by its proper activity, which in turn is distinguished by its proper object.⁴ For when the proper sensible object acts upon the sense, the sensation is produced; for example, when struck by color, the eye sees.

Since knowledge of physical science was very imperfect in his time, St. Thomas followed Aristotle in saying that the sensory organs were mixed bodies composed predominantly of that element which was best suited to be affected by its proper object. Hence the eye was composed mostly of water, the organ of hearing of air, the organ of smell either of air or water, the organ of touch (and taste) of all four basic elements.⁵ Besides having external organs, such as eye, ear, etc., these senses also have internal organs which were assigned

¹For a more complete discussion of the external senses and their objects cf. Stanislas Cantin, "L'objet des sens externes dans la conception aristotélicienne de la sensation," Laval Theologique et Philosophique XV (1959), pp. 9 - 31.

²In II de An., lect. 10, n.350; III, lect. 7, nn. 675-76.

³Ibid., II, lect. 12, n.377.

⁴Ibid., lect. 6, nn. 304-8; Sum. Theol., I, q.77, a.3.

⁵In III de An., lect. 1, nn. 571-72; In de Sen. et Sens., lect. 4, nn. 53-54; lect. 5, nn. 66-68, 73.

definite places in the body. Thus, "the principle of vision," St. Thomas writes, "is internal, near the brain, where the two nerves coming from the eyes are joined together."¹ The tongue was the external organ of taste.² The internal organ of touch and taste, however, was near the heart.³ There were, then, two internal centers of sensation, but they were not independent of each other:

Nec tamen oportet esse duo principia sensitiva in animali; unum circa cerebrum ubi constituitur principium visivum, odorativum et auditivum, et aliud circa cor ubi constituitur principium tactivum et gustativum. Sensitivum anim principium primo quidem est in corde, ubi est fons caloris in corde animalis. Nihil enim est sensitivum sine calore, ut dicitur in libro de Anima. Sed a corde derivatur virtus sensitiva ad cerebrum, et exinde procedit ad organa trium sensuum, visus, auditus et odoratus; tactus autem et gustus referuntur ad ipsum cor per medium coniunctum.⁴

The sensible object according to Aristotle cannot act upon the sense except through a medium.⁵ Following him St. Thomas thought that the medium for light and color is the diaphanum or transparent, a colorless property found in air, water, certain solid bodies like glass, and even in the celestial bodies. Transparency, however, is not in these things by reason of their several natures, as heat is a quality proper to fire; rather "it is consequent on a certain nature common not only to air and water, which are corruptible bodies, but it belongs also to celestial body, which is perpetual and incorruptible."⁶ Light was the act of the

¹In de Sen. et Sens., lect. 5, n.64; cf. lect. 19, n.284.

²In II de An., lect. 22, n.529.

³In de Sen. et Sens., lect. 5, nn. 74-75. ⁴Ibid., n.76.

⁵De An., II, 7, 418a, 26-419b, 3; II, 422b, 17-424a, 15.

⁶In II de An., lect. 14, n.404.

diaphanum¹ and had its source in the celestial body.² Color was thought to be "nothing else than a certain light somehow obscured by the admixture of an opaque body."³ In order for seeing to take place color must strike the eye. Not directly, however, but through a medium, for if a colored object is placed on the eye, nothing is seen. This fact was explained in this way: color by its very nature moves the transparent (diaphanum) but only through light which is the act of the diaphanum; hence when the colored object shuts out the light from the eye no color can be seen. For even though the pupil itself is transparent, it is not in act unless illuminated by light. Hence, light arising ultimately from the celestial body illumines the transparent air (or water) which in turn illumines the transparent pupil.⁴ Similarly all the other senses require a medium between the object sensed and the sensory organ.

Aristotle writes:

The same account holds also of sound and smell; if the object of either of these senses is in immediate contact with the organ no sensation is produced. In both cases the object sets in movement only what lies between, and this in turn sets the organ in movement; if what sounds or smells is brought into immediate contact with the organ, no sensation will be produced. The same, in spite of all appearances, applies also to touch and taste; why there is this apparent difference will be clear later. What comes between in the case of sounds is air; the corresponding medium in the case of smell has no name. But corresponding to what is transparent in the case of colour, there is a quality found both in air and water, which serves as a medium for what has smell.⁵

By analogy with the three senses already discussed Aristotle argues that touch and taste must also have a medium between the objects

¹Ibid., n. 405. ²Ibid., n. 420. ³Ibid., n. 425.

⁴Ibid., lect. 15, nn. 431-32. ⁵De An., II, 7, 419a, 25-34.

sensed and the senses themselves. For these two senses the medium is part of man and not separated from him. The flesh is the medium for touch, the tongue for taste.¹

After treating the senses individually Aristotle draws two general conclusions. The first is as follows:

By a 'sense' is meant what has the power of receiving into itself the sensible forms of things without the matter. This must be conceived of as taking place in the way in which a piece of wax takes on the impress of a signet-ring without the iron or gold; we say that what produces the impression is a signet of bronze or gold, but its particular metallic constitution makes no difference: in a similar way the sense is affected by what is coloured or flavoured or sounding, but it is indifferent what in each case the substance is; what alone matters is what quality it has, i.e. in what ratio its constituents are combined.²

St. Thomas faces an objection in commenting on this passage. Since every agent acts through its form and not through its matter, then every patient receives a form without matter. Thus fire communicates its heat to the air but not its matter.³

To answer this difficulty, St. Thomas distinguishes two modes in which a form is received into a subject. In the first way, the form received in the patient disposes the matter of the patient in a way similar to the way in which that form disposes the matter of the agent. Hence, even though the matter of the agent remains numerically distinct from that of the patient, the patient does acquire a material disposition to the form similar to the disposition of the agent. Such is the way heat is communicated from one substance to another. In the second way, the form received from the agent does not so dispose the matter of the

¹ Ibid., II, 423b, 18-25.

² Ibid., 12, 424a, 17-23; cf. III, 2, 426a, 29-426b, 7.

³ In II de An., lect. 24, n. 551.

patient. Thus the material disposition of the patient to receive the form is not like the material disposition of the agent. In this way the form is present in the patient in a manner different from the manner in which it was present in the agent. It is in this second way, which St. Thomas calls intentional or spiritual, that a sensible form is received into a sense.¹ Then after repeating Aristotle's example of the wax receiving only the form of the signet-ring, he writes:

Et similiter sensus patitur a sensibili habente colorem aut humorem, idest saporem aut serum, "sed non in quantum unumquodque illorum dicitur," idest non patitur a lapide colorato in quantum lapis, neque a melle dulci in quantum mel: quia in sensu non fit similis dispositio ad formas quas est in subjectis illis, sed patitur ab eis in quantum huiusmodi, vel in quantum coloratum, vel saporosum, vel secundum rationem, idest secundum formam. Assimilatur enim sensus sensibili secundum formam, sed non secundum dispositionem materiam.²

The second conclusion about the nature of sensation which Aristotle draws is as follows:

By 'an organ of sense' is meant that in which ultimately such a power is seated.

The sense and its organ are the same in fact, but what they are is not the same. What perceives is, of course, a spatial magnitude, but we must not admit that either the having the power to perceive or the sense itself is a magnitude; what they are is a certain ratio or power in a magnitude. This enables us to explain why objects of sense which possess one of two opposite sensible qualities in a degree largely in excess of the other opposite destroy the organs of sense; if the movement set up by an object is too strong for the organ, the equipoise of contrary qualities in the organ, which just is its sensory power, is disturbed; it is precisely as concord and tone are destroyed by too violently twanging the strings of a lyre. This explains also why plants cannot perceive, in spite of their having something of soul

¹Ibid., nn. 552-53.

²Ibid., n. 554.

in them and obviously being affected by tangible objects themselves; for undoubtedly their temperature can be lowered or raised. The explanation is that they have no mean of contrary qualities, and so no principle in them capable of taking on the forms of sensible objects without their matter; in the case of plants the affection is an affection by form-and-matter together.¹

He then debates whether sensible qualities affect what has no sensation; and he ends the chapter by pointing out that a sensation, such as smelling, is more than to be simply affected by a sensible quality, "smelling is an observing of the result produced." This will prepare for discussion of the common sense in Book III, ch. 2.

St. Thomas' commentary on this passage is very important:

Determinat (Aristoteles) de organo sensus. Quia enim dixerat quod sensus est susceptivus specierum sine materia, quod etiam intellectui convenit, posset aliquis credere, quod sensus non esset potentia in corpore, sicut nec intellectus. Et ideo ad hoc excludendum, assignat ei organum: et dicit quod primum sensitivum, idest primum organum sensus est in quo est potentia huiusmodi, quae scilicet est susceptiva specierum sine materia. Organum enim sensus, cum potentia ipsa, ut puta oculus, est idem subiecto, sed esse aliud est, quia ratione differt potentia a corpore. Potentia enim est quasi forma organi, ut supra traditum est. Et ideo subdit quod "magnitudo," idest organum corporeum est, "quod sensum patitur," idest quod est susceptivum sensus, sicut materia formae. Non tamen est eadem ratio magnitudinis et sensitivi sive sensus, sed sensus est quaedam ratio, idest proportio et forma et potentia illius, scilicet magnitudinis.²

The importance of this passage, it seems to me, is found in its warning not to dematerialize the senses to the point where they would be the same as intellect. The intellect is, in itself, spiritual; the sense is not, since matter is essential and intrinsic to it. In fact, St. Thomas here says that the sense organ is one with the sense power and that the power is only notionally distinct from the organ; since the organ has the power to sense only inasmuch as the elements constituting that

¹ De An., II, 12, 424a, 24-424b, 3.

² In II de An., lect. 24, n.555.

organ are proportioned suitably. Thus even though the notions of "magnitude" and "sensitive" are not the same, nevertheless, the sense consists in the proportion of the elements of the sensory organ and so this proportion is, as it were, the form which constitutes the organ as a power of sensation.¹ Consequently, when it is said that "sense is receptive of species without matter," it must be kept in mind that the sensible forms taken on are not wholly divorced from matter. For the sensible species is received in the knower through a material organ and is subject to some of the material conditions of the sensible object itself.² Color, for example, is present according to the determinate size and shape of the quantified substance in which it inheres. By reason of its subject, which is a continuum, color also exists in a definite place and time and at a definite distance from the sense organ. As a quality, color can undergo alteration; as in a continuum, it can be moved from one place to another.

All these material conditions of the sensible qualities affect the very operation of the various senses. The senses perceive them in attaining their own proper sensible objects, and so, like the proper sensibles, they are per se objects of the senses. But whereas a proper sensible quality is perceived by one sense only, these material conditions are known by many different senses and so they are called "common sensibles."

These common sensibles are all founded on quantity, the most fundamental of the accidents. St. Thomas explains this dependence as follows:

¹Ibid., III, lect. 2, nn. 597-98.

²In de Sen. et Sens., lect. 2, n. 20; lect. 15, n. 221; lect. 18, n. 271.

Qualitates enim, quae sunt propriae objectis sensuum, sunt formae in continuo; et ideo oportet quod ipsum continuum in quantum est subiectum talibus qualitatibus, moveat sensum, non per accidens, sed sicut per se subiectum, et commune omnium sensibilium qualitatibus. Omnia autem haec, quae dicuntur sensibilia communia, pertinent aliquo modo ad continuum, vel secundum mensuram eius ut magnitudo, vel secundum divisionem ut numerus, vel secundum terminationem ut figura, vel secundum distantiam et propinquitatem ut motus.¹

Clearly, then, according to Aristotle and St. Thomas, sensation is a material operation. For the sensible form is limited and conditioned by the material thing to which it belongs. Likewise, the sense is a material organ, and even though it receives the sensible form without matter, the form received is still subject to the conditions of matter.

3. A Problem

In spite of his warning against considering sensation in too spiritual a fashion, St. Thomas himself seems to do just that when discussing the external senses in the Summa Theologica.² He distinguishes two kinds of changes that occur in sensation: one natural or physical, the other he calls "spiritual." In natural change "the form of the thing causing the change is received, according to a physical mode of being, into the thing being changed, as heat is received into the heated." In the change here called "spiritual," on the other hand, "the form of the thing causing the change is received into the thing being changed according to a spiritual mode of being." In this way the form of color is received into the pupil, which does not on this account become colored. St. Thomas then states unequivocally:

¹Ibid., lect. 2, n. 29; cf. In III de An., lect. 1, nn. 577-78; Sum. Theol., I, q. 78, a. 3, ad 2m.

²Sum. Theol., I, q. 78, a. 3c; cf. In II de An., lect. 14, n. 418; III, lect. 1, n. 583.

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.

He goes on to point out that in sight there is no physical change at all, neither in the organ nor in the object; in hearing and smell there is a physical change in the object but not in the organ; in touch and taste there is a physical change in both the object and the organ.

Sed in quibusdam sensibus invenitur immutatio spiritualis tantum, sicut in visu. -- In quibusdam autem, cum immutatione spirituali, etiam naturalis; vel ex parte objecti tantum, vel etiam ex parte organi. Ex parte autem objecti, invenitur transmutatio naturalis, secundum locum quidem, in sono, qui est objectum auditus; nam sonus ex percussione causatur et aeris commotione. Secundum alterationem vero, in odore, qui est objectum olfactus; oportet enim per calidum alterari aliquo modo corpus, ad hoc quod spirat odorem. -- Ex parte autem organi, est immutatio naturalis in tactu et gustu; nam et manus tangens calida calefit, et lingua humectatur per humiditatem saporum. Organum vero olfactus aut auditus nulla naturali immutatione immutatur in sentiende nisi per accidens.

From this discussion St. Thomas concludes that sight is the most spiritual of the senses, since it involves no natural change. Hearing and smell are less spiritual, since there is a natural change in the object. Touch and taste are the least spiritual of all, since they cannot be without natural change in both organ and object.

Many Thomists interpret this passage to mean that in sensation there are two distinct changes that take place, a material or physical change in the organ and an immaterial or spiritual change in the power. For example, Father Koren writes:

In the case of sensitive potencies, which act through an organ, the organ itself first undergoes a material change: e.g., when I touch a piece of iron the iron presses against my hand; hot water physically heats my skin; etc. This material change does not belong to the cognitive order in the strict sense, although it is a condition for sensation. But, in addition to the material change the object produces in the sense organ, it also changes the sensitive potency immaterially by impressing its species on it.¹

¹Henry J. Koren, C.S.Sp., An Introduction to the Philosophy of Animate Nature (St. Louis: B. Herder Book Co., 1955), p. 112.

And again:

By means of the material change operated by the sense object in the sense organ, the object impresses its species upon the sense potency.¹

Likewise, Father Gardell, commenting on the passage from the Summa Theologica quoted above, explains the two types of changes distinguished by St. Thomas as follows:

In other words, the modification of the subject may be of the material order, and this he (St. Thomas) calls a natural immutation, immutatio naturalis; or, it may be of the immaterial order, and this he calls a "spiritual" immutation, immutatio spiritualis. In the first case, when the form is received the subject is changed in its natural being, esse naturale; in the second case, it is modified in its intentional or objective being, esse spirituale.

Both types of alteration may be present in sensation; but it is the so-called spiritual immutation that gives the immediate and proper determination to the act of knowledge. Indeed, the unique passivity that characterizes the fact of knowledge corresponds precisely to this second modification or informing of the knowing potency.²

Then, after exposing St. Thomas' view that no physical change took place in certain sensations, he concludes:

Today, with more accurate methods of investigation, we should doubtless find that in every sensation there is also a physical change in the corresponding organ of sense.³

According to Father Gardell, therefore, sensation consists in the reception of a form or species into the sense faculty, which, thus informed, "actively elicits the act of sensation."⁴ Just how this species informs the sensory power, however, he does not explain. He feels compelled to warn that the species should "not be thought of as elf-like creatures flitting unceasingly to and fro." According to him "the production of the species does not consist in dislodging a form from the object to the faculty of knowledge, but simply in the actuation



¹Ibid., p. 117.

²H. D. Gardell, O.P., Introduction to the Philosophy of St. Thomas Aquinas: III. Psychology, trans. John A. Otto (St. Louis: B. Herder Book Co., 1959), p. 54.

³Ibid., p. 55. ⁴Ibid., p. 56.

of the faculty through the influence of the object."¹ He does not say what this influence is or how it is exercised.

Both these authors, accordingly, follow St. Thomas in distinguishing a material or physical change from an immaterial or spiritual one. They also agree with him in making sensation consist essentially in a spiritual change. They interpret him to mean, however, that the physical change takes place in the sensory organ and that the spiritual change takes place in the sensory power. St. Thomas, however, does not say this. What he does say is that the species or intentional form is received into the organ of sense:

Est autem duplex immutatio: una naturalis, et alia spiritualis. ...Spiritualis autem secundum quod forma immutantis recipitur in immutato secundum esse spirituale; ut forma coloris in pupilla, quae non fit per hoc colorata. Ad operationem autem sensus requiritur immutatio spiritualis, per quam intentio formae sensibilis fiat in organo sensus.²

Virtus autem sensitiva ... quendam immaterialitatem habet, inquantum est susceptiva specierum sensibilium sine materia; infirmam tamen in ordine cognoscentium, inquantum huiusmodi species recipere non potest nisi in organo corporali.³

What is essential to sensation according to St. Thomas, therefore, is that the organ undergo a spiritual change by receiving a species. (We will see what this entails later.) What is not essential is that the organ undergo a physical change. St. Thomas explains what he means by a physical change in the sensory organs as follows:

Est autem alia naturalis transmutatio organi, prout organum transmutatur quantum ad suam naturalem dispositionem: puta quod calefit aut infrigidatur, vel alio simili modo transmutatur. Et huiusmodi transmutatio per accidens se habet ad actum apprehensivae virtutis sensitivae, puta cum oculus fatigatur ex forti intuitu, vel dissolvitur ex vehementia visibilis.⁴

¹ Ibid., p. 56.

² Sum. Theol., I, q.78, a.3c.

³ In de Sen. et Sens., lect. 2, n.20; cf. In III de An., lect. 1, n.583.

⁴ Sum. Theol., I-II, q.22, a.2, ad 3m; cf. In III de An., lect. 7, n.687.

St. Thomas excludes as essential to sensation, therefore, not any change in the organ but only those which are merely accidental to the change which the organ undergoes in receiving its proper sensible species. Thus, to use his example, it is accidental to seeing that the eye get hot or cold.

Accordingly, it would seem to be a misinterpretation of St. Thomas' thought to say, as Father Keren does, that the material change in the sense organ "does not belong to the cognitive order in the strict sense" but is merely "a condition for sensation."¹ Nor is the interpretation of Father Gardeil any better; for he also makes sensation consist in the actuation of the sensory power of the soul by a species and treats all changes in the organ as accidental.

In all fairness to these authors, however, it should be noted that this bifurcated explanation of sensation -- in which the organ is given a role that is no more than accidental to the essential act, namely, the informing of the sensory power of the soul by its species -- seems to find strong support in a passage which St. Thomas inserts into his commentary on Aristotle's treatment of smell in the De Anima. He first reports the position of those ancient philosophers who held that all sensations require the sense to be in contact with the sensible. In sight, however, this contact was achieved in a manner different from that of the other senses. These ancients thought that in seeing, visual lines went out from the eye to the object, and when contact was established the object was seen. In the other senses, however, the sensible object was brought to the sense. Such is plainly the case in

¹Keren, An Introduction to the Philosophy of Animated Nature, p. 112.

touch and taste. In hearing too the movement of the air caused by the sounding object goes right to the ear. Now a similar process was thought to take place in smell, so that the object appeared to emit odiferous fumes which were carried to the organ of smell.

St. Thomas attributes the difference in the way they explained vision to the fact that they did not realize that the sensible medium could undergo a change that is not physical, and which he calls "spiritual," whereas they explained all sensations in terms of physical immutations only. In the senses other than sight the physical change of the medium is apparent. For the wind may either carry or impede sounds and odors. Contrary colors, however, are transmitted through the same part of the air and do not impede each other, whereas contrary odors do. Consequently, since the ancients did not understand how the medium is changed by the visible object, they held that sight was brought to the thing seen. On the other hand, since the change of the medium in the other senses was obvious, they believed that the other proper sensibles were brought to the individual sense.

St. Thomas, however, maintains that such a physical contact theory cannot be used to explain sensations of smell. To support his stand he cites what was commonly supposed to be a fact, namely, that vultures are led to carrion by their sense of smell over distances as great as five hundred miles. For him it is unimaginable that an odor could reach so far, especially since, unless impeded, the air would be odiferous for the same distance on all sides of the cadaver. To fill such a volume of air the whole cadaver would have to be resolved into fumes, and yet the cadaver does not appear to be changed. Then St. Thomas concludes the discussion as follows:

Et ideo dicendum est, quod ab odorabili resolvi quidem potest fumalis evaporatio, quae tamen non pertingit usque ad terminum ubi odor percipitur, sed immutatur medium spiritualiter, ultra quam dicta evaporatio pertingere possit. Quod autem spiritualis immutatio fit a visibili magis quam ab aliis sensibilibus, ratio est, quia visibiles qualitates insunt corruptibilibus corporibus, secundum quod communicant cum corporibus incorruptibilibus; unde habent esse formalius et nobilius quam reliqua sensibilia, quae sunt propria corruptibilium corporum.¹

This passage certainly seems to confirm the interpretation of St. Thomas given by these authors quoted earlier, according to which the physical change in the organ was merely accidental and only a spiritual change was essential. For in this passage he clearly states that the fumes from the object smelled do not reach the place where the odor is perceived, but rather that the medium is changed spiritually. It would seem logical to conclude, therefore, that the sense does not undergo a physical change but only a spiritual one.

Such an interpretation, however, raises many problems. First of all, if the sense and the sensible need not be in physical contact through a physical medium to explain sensations of smell and sight, and, consequently, if no physical change occurs in these sense organs -- as also in hearing -- then what purpose do the physical media and the organs of these senses serve? Furthermore, even if the media posited for these senses do undergo a "spiritual" immutation, how can this "spiritual" immutation of a basic physical element be explained? Lastly, without a physical change in the organ, how can sensation be explained as essentially different from the purely spiritual operations of the rational soul?

¹In II de An., lect. 20, nn. 492 - 95.

There are many issues involved here, and they are obscured somewhat by outmoded physical theories. Let us begin by trying to see more clearly what St. Thomas means when he says that sensation involves a "spiritual" change. Since sight is the most spiritual of the senses, an investigation of "spiritual" in that context will probably be the most revealing.

tialem panis, virtute ignis decoquentis materiam ex farina et aqua confectam.»¹

Il n'y a que l'art divin dont les œuvres soient à la fois artificielles et naturelles. C'est que la puissance créatrice atteint les choses dans tout ce qu'elles sont, dans leurs principes intrinsèques autant que dans leurs principes extrinsèques ; cet art est créateur parce qu'il ne présuppose rien. L'art créé présuppose la nature, il imite la nature mais « in quantum potest »² seulement.

Telle est donc la différence entre l'argument des *Physiques* et celui du Prologue de la *Politique*. Le premier s'appuyait sur l'origine sensible de la connaissance humaine ; le second fait appel à la ressemblance entre l'intellect humain et l'intellect divin. Nous pensons en avoir dégagé la raison, savoir que la démarche du métaphysicien composant un *prooemium* ne pouvait être celle du philosophe de la nature explicitant un point particulier de doctrine. Saint Thomas n'avait pas à reprendre en son Prologue son argument des *Physiques* ; il convenait, au contraire, que pour légitimer que l'art imite la nature il usât cette fois des raisons les plus générales et les plus communes.

Sœur SAINT-MARTIN-DE-TOURS, A. S. V.

“Spirituality” and Sensation

A great philosopher sees things on a grand scale. He views a particular problem in the light of universal principles, a part within a whole. He, therefore, has to use analogous rather than univocal words ; he is forced to make subtle distinctions and to express his thought on specific questions in general terms which seem needlessly obscure and sometimes, perhaps, even evasive. This manner of speaking is, of course, necessary, but it does lead to misunderstanding. For those who do not have the philosopher's vision tend to restrict his words according to their own more limited perspective and so judge him out of context. Various interpretations of the philosopher's thought soon arise and some become dominant. But no matter how canonized any interpretation may be, we are never absolved from the duty of reading for ourselves what the philosopher himself had to say. For as our own minds open up and our horizons are enlarged, the force of his reasoning dawns upon us and we see more clearly why he expressed himself the way he did.

It is the aim of this article to investigate St. Thomas' theory of sensation. This may seem like a useless task, for it is, perhaps, taken for granted that his thought on this subject is already well known. Yet the explanation of sensation given by many modern Thomists contains a dualism between organ and power that is not entirely satisfactory. We notice, too, a certain discrepancy between the terminology of St. Thomas and that of his interpreters. In itself this is not bad : St. Thomas himself observes “sapientis enim est de nominibus non curare.”¹ Yet he is very careful in his use of words, and we might well ask ourselves whether we have really grasped his meaning if we find that we are not so much explaining what he wrote as explaining it away.

One source of this confusion seems to be the failure of some authors to appreciate sufficiently the fact that St. Thomas, following Aristotle, considers Psychology as a part of the Philosophy of Nature.² Consequently, such words as *motus*, *actio*, *passio*, *actus perfecti*, and many others, when used of the operations of the senses and the intellect, have a significance analogous to a primary meaning explained in the *Physics*. This basic meaning is a prerequisite to understanding St. Thomas' use of the word in commenting on *De Anima* and *De Sensu et Sensato*. Certainly we cannot understand the brief treatment of sensation in the *Summa Theologiae* without knowing these other books.

1. *Ia*, q.75, a.6, ad. 1.

2. *Attendum est autem quod actus rationis similes sunt, quantum ad aliquid, actibus naturae. Unde et ars imitatur naturam in quantum potest. In I Post. Anal.*, lect.1, n.5.

1. *In II Sent.*, d.3, q.1, a.1, c.
2. *In I de An.*, lect.2, nn.23-30.

Another cause of misunderstanding St. Thomas' teaching on sensation is that he had to explain the sense organs according to the physiological theories of his time. Today these medieval theories seem hopelessly outmoded and unsophisticated. Yet we have to understand them. How else can we assess the extent of their influence on his thought? Only when we understand them can we hope to grasp the philosophical truth he was trying to elucidate through them.

I. THE "SPIRITUALITY" OF THE SENSIBLE SPECIES

1° Sight.

One of the reasons that sight was considered the most spiritual of the senses was that it perceived objects by reason of properties shared by both celestial and terrestrial bodies.¹ Another reason was that whereas the other senses involved physical changes either in the object alone or in the object and the sense, sight involved no physical change at all.² When St. Thomas speaks of the spirituality of sight, however, he does not mean that this sense is spiritual in the same way as the intellect is. In fact, the immediate context of this discussion of the superiority of sight over the other senses is precisely to show that we cannot argue to the spiritual nature of light seen by the eyes from the fact that we speak of light also in reference to intellectual beings. "For it is impossible," he writes, "that any spiritual and intelligible nature should fall under the apprehension of a sense; which, since it is a corporeal power, can know only corporeal things."³ Light is a corporeal quality, found primarily in a celestial body, and is classified, like heat, in the third species of quality. The proof of the corporeal nature of light was found in the fact that light from the celestial bodies produces physical changes in things.⁴ Hence the word "light" signifies, first of all, the light seen by the eyes, and then the word is applied analogously to the intelligible order, because of the excellence of the power of sight.⁵ St. Thomas explains this procedure in this way:

Respondet dicendum quod de aliquo nomine dupliciter convenit loqui: uno modo, secundum primam eius impositionem; alio modo, secundum usum nominis. Sicut patet in nomine *visionis*, quod primo impositum est ad significandum actum sensus visus; sed proper dignitatem et certitudinem huius sensus, extensus est hoc nomen, secundum usum loquentium, ad omnem cognitionem aliorum sensuum (dicimus enim, *Vide quomodo sapit*, vel *quomodo redolet*, vel *quomodo est calidum*); et

1. *Ibid.*, II, lect.14, n.417.
2. *Ibid.*, n.418.
3. *Ibid.*, n.416.
4. *Ibid.*, n.420.
5. *Ibid.*, n.417.

utentis etiam ad cognitionem intellectus, secundum illud Matth. 5: *Beati mundo corde, quoniam ipsi Deum videbunt*.

Et similiter dicendum est de nomine *lucis*. Nam primo quidem est institutum ad significandum id quod facit manifestationem in sensu visus: postmodum autem extensus est ad significandum omne illud quod facit manifestationem secundum quancumque cognitionem.¹

Conversely, it would seem the word "spiritual" is said first of the intelligible order and then applied in an extended meaning to the sensible order.

Yet, if light is a corporeal quality and is not, strictly speaking, spiritual, how, then, can St. Thomas say that when light and color (color is assumed to be "nothing else than a certain light somehow obscured by the admixture of an opaque body") strike the eye, *no physical change is produced but only a spiritual or intentional one*?² How does a physical change differ from an intentional or spiritual one? Or, to phrase the question differently,³ since every change is in a patient and from an agent, how does a passion in the physical order differ from a passion in the intentional order?

St. Thomas answers this question as follows:

Dicit ergo (Aristoteles) primo, quod sicut potentia et actus non dicuntur simpliciter, sed multipliciter; ita et pati non uno modo, sed multipliciter. Dicitur enim pati *uno modo*, secundum quandam corruptionem, quae fit a contrario. Passio enim proprie dicta, videtur importare quoddam decrementum patientis, in quantum vincitur ab agente: decrementum autem patienti accidit secundum quod aliquid a patiente abicitur. Quae quidem abieccio, corruptio quaedam est: vel simpliciter, sicut quando abicitur forma substantialis: vel secundum quid, sicut quando abicitur forma accidentalis. Huiusmodi autem formae abieccio fit a contrario agente: abicitur enim forma a materia vel subiecto, per introductionem contrariae formae; et hoc est a contrario agente. Primo igitur modo proprie dicitur passio, secundum quod quaedam corruptio fit a contrario.

Alio modo passio communiter dicitur et minus proprie, secundum scilicet quod importat quandam receptionem. Et quia quod est receptivum alterius, comparatur ad ipsum sicut potentia ad actum: actus autem est perfectio potentiae; et ideo hoc modo dicitur passio, non secundum quod fit quaedam corruptio patientis, sed magis secundum quod in actu. Quod enim est in potentia, non perficitur nisi per id quod est in actu. Quod autem in actu est, non est contrarium ei quod est in potentia, in quantum huiusmodi, sed magis simile: nam potentia nihil aliud est quam quidam ordo ad actum. Nisi autem esset aliqua similitudo inter potentiam et actum, non esset necessarium quod proprius actus fieret in propria potentia. Potentia igitur sic dicta, non est a contrario, sicut potentia primo

1. *Ia*, q.67, a.1, c.; cf. *In V Metaph.*, lect.5, nn.824-825.
2. *In II de An.*, lect.14, n.418.
3. *In V Phys.*, lect.3, n.668.

modo dicta ; sed est a simili, eo modo quo potentia se habet secundum similitudinem ad actum.¹

For a passion properly so called, two things are required : (1) that one form be lost when a contrary form is acquired ; and (2) that there be a material subject, since "passion . . . occurring with the expulsion (of a contrary form) is only according to corporeal transmutation."² An example of this type of change would be the heat of the sun which expels the cold from the air or, again, change in quantity, etc. Because the heating of the air is a motion, and motion occurs with time, the expulsion of the contrary quality involves time. The subject must be gradually disposed to receive the new quality ; in other words, this type of change is not instantaneous but takes time.

Passion commonly so called, on the other hand, is said of any reception and requires neither the expulsion of a contrary form nor a corporeal subject ; hence, St. Thomas explains both sensory and intellectual knowledge as passions commonly taken.³ In fact, the intellect can undergo a passion, in the common sense of the term, in two ways : first, insofar as the intellect considers here and now the knowledge it already had ; second, insofar as the intellect goes from ignorance to knowledge. This latter type of passion may occur in still another way, namely, when the intellect goes from error to truth. This last instance may seem to be contrary to the description of passion in the common sense ; for one of its requirements is that no contrary form is lost. St. Thomas says, however, that since the intellect can learn without first being in error, learning in this way "is not truly an alteration from one contrary to another."⁴ We might add, also, that even false knowledge is retained : we remember our false opinions but we now know them as false. As we will see, the knowledge of truth belongs not to the first but to the second act of the intellect.

Passion commonly so called, however, is not limited to the intellectual order ; it is found even in the material. Hence, St. Thomas says that the air is said to undergo a passion in the common meaning of the term when it is illuminated.⁵ For even though light is a corporeal quality, as we saw, it has no contrary ; and, consequently, when the air is illuminated no contrary quality need be expelled. In other words, the air, or rather, the diaphanum, is always in the ultimate disposition to the form of light. As a result, the diaphanum is illuminated instantaneously.

Et quia luci nihil est contrarium, in suo susceptibili non potest habere contrarium dispositionem : et propter hoc suum passivum, scilicet diaphanum, semper est in ultima dispositione ad formam : et propter hoc statim illuminatur.¹

1. *In II de An.*, lect.11, nn.365-366.

2. *Ia IIæ*, q.22, a.1, c.; cf. ad.1 ; a.3, c.

3. *Ibid.*, a.1, c.

4. *In II de An.*, lect.11, nn.367-370.

5. *Ia IIæ*, q.22, a.1, c.

phannum, semper est in ultima dispositione ad formam : et propter hoc statim illuminatur.¹

Although the pupil of the eye is a material organ, it is also, like the air, a diaphanum.² When light or color strikes the eye, therefore, no contrary quality is expelled as in natural immutations and the change takes place immediately. Hence, St. Thomas calls this a spiritual immutation of the medium and the sense organ, and he says that it is like the immutation of the intellect by intentional (spiritual) forms.³ Because the organ of sight, therefore, is changed in this "spiritual" way and not in a material way, sight is said to be the most spiritual of the senses.

In support of this explanation there are three passages which must be considered attentively.

1) "Spiritualis . . . (immutatio est) secundum quod forma immutantis recipitur in immutato secundum esse spirituale ; ut forma coloris in pupilla quae non fit per hoc colorata. Ad operationem autem sensus requiritur immutatio spiritualis, per quam intentio formae sensibilis fiat in organo sensus."⁴

2) *Immutatio vero spiritualis est secundum quod species recipitur in organo sensus aut in medio per modum intentionis, et non per modum naturalis formae. Non enim sic recipitur species sensibilis in sensu secundum illud esse quod habet in re sensibilis.*⁵

3) *Actus enim sunt in susceptivis secundum modum ipsorum : et ideo color est quidem in corpore colorato sicut qualitas completa in suo esse naturali ; in medio autem incompleta secundum quoddam esse intentionale ; alioquin non posset secundum idem medium videri album et nigrum. Albedo autem et nigrredo, prout sunt formae completae in esse naturali, non possunt simul esse in eodem ; sed secundum predictum esse incompleta sunt in eodem, quia iste modus essendi propter suam imperfectionem appropinquat ad modum quo aliquid est in aliquo in potentia. Sunt autem in potentia opposita simul in eodem.*⁶

In regard to the first passage, it should be noted that the example St. Thomas gives of a spiritual change is the reception of the form of color into the pupil of the eye. We have already seen that he considered the "form of color" a physical quality, and he implies this truth here inasmuch as he says that color is received into the pupil, a material organ. This reception is a spiritual change, however, inasmuch as no contrary quality is expelled from the pupil

1. *In II de An.*, lect.14, n.421.

2. *Ibid.*, lect.15, n.432.

3. *Ibid.*, lect.14, n.418.

4. *Ia*, q.78, a.3, c.

5. *In II de An.*, lect.14, n.418.

6. *In de Sen. et Sens.*, lect.5, n.62 ; cf. lect.19, n.291.

which is a diaphanum and does not become colored. St. Thomas calls "the form of color in the pupil" the "intention of the sensible form."

In the second text St. Thomas says that in the spiritual change which occurs in sensation the species is received not only in the organ of the sense but also in the medium "in an intentional manner." Now the medium for sight is the diaphanum, a corporeal quality as we saw; in fact, the pupil of the eye, which is diaphanous, is also a medium allowing the immutation to reach the principle of vision which is located near the brain.¹ This immutation is said to take place in the organ or the medium, "in an intentional manner."

In the third passage, St. Thomas explains that by the intentional presence of a sensible quality in a medium, he means an "incomplete" presence which "because of its imperfection approaches the mode by which something is potentially present in another." Because opposites can be potentially present in the same subject simultaneously, St. Thomas uses this incomplete presence of colors in the diaphanum to explain how the same medium can carry contrary colors like black and white. Hence, we arrive at the position, stated earlier, that when St. Thomas speaks of a "spiritual change" required for seeing, he does not mean spiritual to be taken in the strict sense as the term would be when applied to the intellect. Rather, he means a change, therefore can take place *instantaneously*. Hence, this "spiritual change" refers only to the *mode of immutation* by which the sensible qualities of physical bodies affect the sense organ. In sight, at least, this qualitative immutation is instantaneous. By "spiritual change," St. Thomas in no way implies that the sensible qualities of the physical body do not come into contact with the sensory organ. In regard to vision he is quite explicit on this point. He writes:

Oportet autem quod color moveat diaphanum in actu, puta aerem vel aliquid huiusmodi; et ab hoc movetur sensitivum, idest organum visus, sicut a corpore sibi continuo. Corpora enim non se immutant, nisi se tangant.²

Because sight involved only a "spiritual" immutation, it was considered to be the most spiritual of the senses. The other senses were not moved to their operations except through physical changes, which St. Thomas describes thus:

Dico autem immutationem naturalem prout qualitas recipitur in patiente secundum esse naturae, sicut cum aliquid infrigidatur vel calefit aut movetur secundum locum... Patet autem quod in tactu, et gustu, qui est tactus quidam, fit alteratio naturalis; calefit enim et infrigidatur

1. *Ibid.*, n.64.

2. *In II de An.*, lect.15, n.432.

aliquid per contactum calidi et frigidi, et non fit immutatio spiritualis tantum. Similiter autem immutatio odoris fit cum quadam fumali evaporatione: immutatio autem soni, cum motu locali. Sed in immutatione visus est sola immutatio spiritualis.¹

Accordingly, the senses other than sight do require a physical change: but they also demand a "spiritual" one.² If, as we have maintained, a "spiritual" change in sensation is a "common passion," in which a sensible quality is received into the medium or organ of the sense without expelling a contrary quality and, therefore, takes place instantaneously, how can this be verified of the other senses?

2° Smell.

Let us first consider smell. In his commentary on *De Anima*³ there is a long passage in which St. Thomas seems to deny, at least in the case of vultures aware of carrion over great distances—a fact which was for a long time mistakenly but commonly attributed to the vulture's sense of smell⁴—that physical contact was established between the organ and the object emitting the odor. For he expressly denies that an odorous exhalation from the object could reach the organ of smell from so far. What does he mean, therefore, when he says that the medium is changed "spiritually"—even beyond the limits of the object's exhalation? It seems that "spiritual change" when said of smell cannot mean the same as it did in the context of sight. For the passage under consideration⁵ seems to deny that the physical quality itself reaches the organ of smell. In fact St. Thomas is speaking precisely against those who explained all sensation in terms of mere contact.⁶ Furthermore, odors, like sounds, take time to pass through their medium. St. Thomas states this explicitly: "For it is manifest that someone close by is aware of a scent first."⁷ Apparently, a spiritual change in the medium cannot mean an instantaneous one, as we have maintained when treating sight.

What complicates our reading of this passage on smell is our knowledge that science today speaks of odors as the gaseous or molecular diffusion of substances which affect by contact the organ

1. *Ibid.*, lect.14, n.418.

2. *Ibid.*; *Ia*, q.78, a.3, c.

3. *In II de An.*, lect.20, nn.492-495.

4. Von Buddenbrock, *The Senses* (Ann Arbor: The University of Michigan Press, 1938), p. 117.

5. *In II de An.*, lect.20, nn.492-495.

6. *Ibid.*, n.492.

7. *In de Sen. et Sene.*, lect.16, n.225.

of smell.¹ Hence, the particles must be somehow in contact with the olfactory nerves to produce this sensation. St. Thomas, however, considered the *fumalis evaporatio* from the object to be the remote, not the proximate cause of odors. The evaporation of particles into the air by the action of heat on the object caused a *qualitative alteration of the air*, which in turn came in contact with the sensory organ to produce the sensation of smell. He explains this in the following two passages:

1) Manifestum est autem quod odor est fumalis evaporatio: non quidem ita quod fumalis evaporatio sit ipsa essentia odoris, hoc enim improbatum est, secundo *de Anima*, longius enim diffunditur odor quam fumalis evaporatio; sed hoc dicitur, quia *fumalis evaporatio est causa quod sentiantur odori*. Fumalis enim evaporatio est ab igne vel a quocunque calido: ergo odoratus in actu fit per caliditatem, quae principaliter est in igne; et ideo in temporibus et locis calidis flores sunt maiores odoris.²

2) Huiusmodi autem (immutationes) quae perveniunt ad singulorum sensus, non sunt corpora defluentia a corpore sensibili, ut quidam posuerunt; sed singulorum eorum est motus et passio medi immutati per actionem sensibiles... Et quamvis non sint corpora, non tamen sunt sine corpore, vel medio, quasi passo et moto a sensibili, quasi primo movente et agente. Sic ergo per praedicta patet, quod sonus pervenit ad auditum per multos motus partium medi sibi invicem succedentes; et simile est *de odore, nisi quod mutatio odoris fit per alterationem medi*: immutatio autem soni per motum localem.³

So far, then, it has been established that, as in seeing so in smelling, St. Thomas considered the sense to be in contact with the odiferous object through the alteration of the corporeal medium. The problem still remains, however, of deciding whether this change in the medium and in the organ is a physical one or a "spiritual" one, in the sense determined earlier. This immutation of the medium and the organ would seem to be a physical one since in the passage just quoted St. Thomas says expressly that the medium in both hearing and smelling is changed successively, while a "spiritual" change occurs instantaneously. Furthermore, he says that "contrary odors, even in their medium, are found to impede themselves."⁴ If, then, the change in the medium and organ were "spiritual" and, therefore, instantaneous, how could it occur successively? St. Thomas solves this problem ingeniously.

As we have seen, he considered that the air became odiferous through a qualitative change. A qualitative alteration occurs in a

different manner from changes in place or in quantity, although time, "the measure of motion according to its before and after," measures every kind of motion.¹ In changes of place the motion must first arrive at the middle of the distance before reaching the end of it. Hence, the time which measures this motion will be, like the distance traversed, divisible yet continuous.² A qualitative alteration, however, is not like a change of place. "For sometimes it happens that the whole body is altered simultaneously, and not one half of it first, just as we see that a whole body of water is frozen at once."³ There is, of course, a sense in which a qualitative change takes time, but the time in this case measures the distance between the terms of the change. For example, it takes more time for cold water to become hot than for warm water to become hot.⁴ Nevertheless, there are qualitative changes according to contradictory terms, and therefore, such changes do not admit of a mean between the two extremes, and occur instantaneously. St. Thomas explains this as follows:

Contradictio... est oppositio, cuius non est medium secundum se, ut dicitur in primo *Posteriorum*, et eadem ratione supposita aptitudine subiecti, cum privatio nihil aliud sit quam negatio in subiecto. Unde omnes mutationes quarum termini sunt esse et non esse, vel privatio et forma, sunt instantaneae, et non possunt esse successivae.⁵

Air, as we saw, is the medium for odor and is in potency to it. Since the transition from non-odiferous to odiferous is a change according to contradictories, this change takes place instantaneously.

But how, then, does St. Thomas account for the fact mentioned earlier, that odors take time to pass through the air? He explains it as follows:

In alterationibus enim successivis attenditur successio secundum distantiam unius contrarii ab alio (per) determinata media: in qua quidem distantia tota magnitudo corporis, in quam potest immediate virtus primi alterantis, consideratur sicut unum subiectum, quod statim simul incipit moveri. Sed, si sit corpus alterabile tam magnum, quod virtus primi alterantis non possit ipsum attingere secundum totum, sed secundum partem eius, sequitur quod prima pars primo alterata, alterabit consequenter aliam. Et ideo dicit quod, si fuerit multum corpus quod calefit vel quod congelatur, necesse est quod habitum patitur ab habito, id est quod consequens pars ab immediate praecedente alteretur. Sed prima pars alteratur ab ipso primo alterante, et simul et subito, quia scilicet non est ibi successio ex parte magnitudinis, sed solum ex parte contrariorum qualitatum, ut dictum est.

1. George P. Klubereaux, S.J., *The Philosophy of Human Nature* (New York: Appleton-Century-Crofts, Inc., 1953), p. 107.

2. *In de Sen. et Sens.*, lect. 5, n. 68.

3. *Ibid.*, lect. 16, n. 230.

4. *In II de An.*, lect. 20, n. 193.

1. *In IV Phys.*, lect. 3.

2. *Ibid.*, VI, lect. 3; *In de Sen. et Sens.*, lect. 16, nn. 24-25, 251.

3. *In de Sen. et Sens.*, lect. 16, n. 245.

4. *Ibid.*

5. *Ibid.*, n. 246; cf. *In I Phys.*, lect. 3, n. 670.

Haec autem est causa quare odor prius pervenit ad medium quam ad sensum, quamvis hoc fiat per alterationem sine motu locali, quia corpus odoriferum non potest simul immutare totum medium, sed immutat partem unam, quae immutat aliam; et sic successive pervenit immutatio usque ad olfactum per plures motus...¹

Accordingly, the change of the air in becoming odiferous is instantaneous inasmuch as one part of the air takes on an odor instantaneously; it is successive insofar as one part when altered, then alters another part. Hence, odors travel through the air by a series of instantaneous motions.

As we saw earlier in discussing the power of sight, a spiritual change for St. Thomas means one which is instantaneous. Accordingly, since the air undergoes a series of instantaneous changes in becoming odiferous, it too is said to be changed "spiritually." By the "spiritual" immutations of the air, the odor reaches far beyond the evaporation of particles from the object—even to the vulture hundreds of miles away.²

Once more, however, it should be stressed that this change in the medium is called spiritual by reason of its mode of immutation.³ What is received is a physical quality or sensible form. "Odor," St. Thomas says, "is received in the air and the water... according to its proper and natural being." Hence, this explains why odors remain in the air for awhile even after the odiferous object has been removed, and why one part of the air, having one become odiferous, can change another part of the air.⁴

The physical nature of the immutation of the medium is brought out also by the remark St. Thomas makes in the text about the vulture:

In aliis autem sensibus apparet quaedam immutatio naturalis in medio, sed non in visu. Manifestum est enim, quod soni et odores deferruntur per ventos vel impediuntur, colores autem nullo modo.⁵

Hence, the motion involved is the *physical* immutation of the medium; the instantaneity, as we saw, accounts for the *spiritual* immutation of the medium. For St. Thomas says that in every sense but sight, "there is no spiritual change without a natural one."⁶

1. *In de Sen. et Sens.*, lect. 16, nn. 247-248.

2. *In II de Ar.*, lect. 20, n. 495.

3. *Ibid.*, lect. 14, n. 418.

4. *In de Sen. et Sens.*, lect. 15, n. 212.

5. *In II de Ar.*, lect. 20, n. 493.

6. *Ibid.*, lect. 14, n. 418.

3° Hearing.

According to St. Thomas hearing is like smelling inasmuch as both these sensations demand a physical change in the object but not in the sensory organ.¹ They differ, however, in the types of change involved. An odor is caused by the evaporation of particles from an object which produces a *qualitative* change in the medium affecting the sensory organ; a sound arises from a vibrating surface which produces a *local motion* of the air, which is the medium for sound.²

St. Thomas bases his classification of sound as a local motion on the fact that if one sees from afar something being struck, the resulting sound reaches the ear some time later. "It is clear," he writes, "that the sound does not reach the hearing as soon as the blow which causes the sound is struck."³ And he strengthens this reasoning with the observation that when someone calls out to us from a distance the words become jumbled, even though we hear the voice—a fact which indicates that the sound of the words is carried through the air "successively" and that the air, as it were, loses the impression made by whatever first caused the sounds.⁴ In fact, this confusion of sound may be caused either by another motion of the air, which impedes the first one, as when many people are talking together, or it may be due simply to the distance involved, just as we feel the heat less intensely the further we are from the fire.⁵

All of this evidence indicates that sounds travel through the air in successive motions. This is possible insofar as the air is easily divisible and one part of the air can move another part. Hence, there are different motions succeeding each other in the same air:⁶

Et hoc etiam apparet in sono, qui causatur ex quadam aeris percussione; non tamen ita quod totus aer, qui est medius, uno motu moveatur a percussente; sed sunt motus multi sibi succedentes ex eo quod una pars primo mota movet aliam.⁷

In this way, therefore, a sounding object moves the air and this movement passes through the air to the ear:

Sonus autem consequitur quendam motum localem, in quantum scilicet ex percussione causante sonum commovetur aer usque ad auditum; et ideo rationabile est, quod sonus prius perveniat ad medium, quam ad auditum.⁸

1. *Ia*, q. 78, a. 3, c.

2. *In de Sen. et Sens.*, lect. 16, n. 230.

3. *Ibid.*, n. 231; cf. *Ibid.*, n. 225.

4. *Ibid.*, n. 232.

5. *Ibid.*, n. 233.

6. *Ibid.*, n. 236.

7. *Ibid.*, n. 237.

8. *Ibid.*, n. 244.

(4)

Sound, consequently, is a physical movement of a physical medium caused by a physical object. This percussion of the air by the sounding object is not a series of instantaneous changes like those by which odor was thought to travel through the air. Rather, in sound, the movement is continuous and gradual as in any local motion. In fact, St. Thomas explains that sound is like the motion of waves in water :

Considerandum est . . . quod generatio soni in aere consequitur motum aeris . . . Sic autem contingit de immutatione aeris apud generationem soni, sicut de immutatione aquae, cum aliquid in aqua proicitur. Manifestum est enim quod fiunt quaedam gyrationes in circuitu aquae percussae. Quae quidem circa locum percussus sunt parvae, et motus fortis. In remotis autem gyrationes sunt magnae, et motus debilior. Tandem autem motus totaliter evanescit et gyrationes cessant.

Sic igitur intelligendum est, quod ad percussionem corporum sonantium, aer in gyrum movetur, et sonus undique diffunditur. Et in vicino quidam gyrationes sunt minores sed motus fortior ; unde sonus fortius percipitur. In remotis autem gyrationes sunt majores, et motus debilior, et sonus obscurior auditur. Tandem autem deficit totum.¹

It is by analogy with waves in water that he also explains an echo : it is the sound wave rebounding from a surface, especially from a concave one. It might be noted, in passing, that St. Thomas inserts this explanation of sound as a wave motion instead of Aristotle's explanation of echoes in terms of the refraction of light. After giving his own explanation, St. Thomas then comments on Aristotle's. The explanation of sound given today is substantially the same as that of St. Thomas.

In brief, then, a reverberating surface sends a series of sound waves through the air. Hence, sound is a change in the air according to local motion. Furthermore, since a sounding object sets off a series of such waves in the air, the motions of the air subject to sound are successive. There is a difference, then, between the successive motions in the air that were thought to convey odors and the successive motions of the air that convey sound.² When subject to odor, the air was seen as altered by a single series of discrete transformations ; when moved by sound, the air undergoes a whole series of continuous motions.

When discussing smell, we saw that the air was believed to undergo a physical alteration which could also be called "spiritual" insofar as successive parts of the air were altered instantaneously. Can we say likewise, that sound is also present in its medium spiritually ? Certainly not insofar as the sound is travelling in a continuous

wave through the air, for that passage is measured by time and is not instantaneous. Nevertheless, it can be said that sound is *generated* in the air instantaneously or "spiritually" inasmuch as the resounding surface must be one which strikes the air suddenly, not allowing the air to retreat :

Sed si percussio sit velox et fortis, tunc fit sonus ; quia ad hoc quod fiat sonus, oportet quod motus percussantis praeventiat divisionem aeris, ut aer adhuc adunatus sive collectus percipi possit, et in eo sonus generari.³

The sudden striking of the air generates a sound wave.

This generation, since it is a passage from non-sound to sound, from its non-being to being, is instantaneous⁴ and, therefore, "spiritual." The air may be already in motion from other sounding objects, and these sound waves so impede the new one that it is not heard so clearly.⁵ Nevertheless, this new sound in the air, though somewhat impeded, is still instantaneously generated and, therefore, spiritual in the sense already defined. Thus, after noting that "sounds and odors are carried or impeded by the winds," and that "contrary odors are found to impede themselves even in their medium,"⁶ St. Thomas does not hesitate to say that the air undergoes a spiritual immutation when subject to odor inasmuch as odor is instantaneously generated in succeeding parts.⁷ Likewise, the generation of sound, that is, the passage from non-sound to sound, in the air is instantaneous and therefore spiritual. Unlike the many immutations of the air by an odor, there is but a single generation of a sound wave and its passage through its medium is according to local motion. Once generated, then, the sound passes through the air, which is a continuum, and reaches the organ of hearing.⁸

St. Thomas followed Aristotle in maintaining that the organ of hearing has air built into its very structure, so that the same motion (sound wave) in the air outside will pass to the air within the ear.⁹ The air within the ear, however, is immobile, that is, it has no sounding motion of its own, so that it is in potency to percussion by the sounds coming to it from the outside and so can discern different sounds.¹⁰ Accordingly, hearing is impeded when water gets into the ear and when the air within the ear is in a state of percussion. When a person, therefore, is conscious of a ringing sound in his ears or when

1. *In II de An.*, lect. 16, n. 446.

2. *In de Sen. et Sens.*, lect. 16, n. 246.

3. *Ibid.*, n. 233.

4. *In II de An.*, lect. 20, n. 493.

5. *Ibid.*, n. 495 ; *In Sen. et Sens.*, lect. 16, n. 248.

6. *In II de An.*, lect. 17, n. 452.

7. *Ibid.*, n. 453.

8. *Ibid.*, n. 454.

1. *In II de An.*, lect. 16, nn. 447-448.

2. *In de Sen. et Sens.*, lect. 16, n. 239.

he continually hears a sound like that heard when a horn is placed to the ear, this is a sign that his hearing is defective, because the air within the ear has a percussive of its own which prevents, to some extent, the reception of sounds from outside.¹

The air within the ear is sealed off from the air outside by the *tympanum auris* — the ear drum; and, if in good condition, it has no such motion of its own.² Hence, when the sound travelling through the air outside strikes the ear drum, similar new waves are generated in the air inside, and so this generation, being instantaneous, is a "spiritual" change in the organ of hearing.

At this point it seems opportune to remark that St. Thomas' insistence on the spiritual immutation of the media of the various senses seems to have been required only by the physiological theories of his day, according to which the external medium was also the major component of the organ. For example, the diaphanum was a quality present in both air and water and the eye being composed of water also possessed this quality. Similarly, the ear had air built into its very structure and air was the medium for sound. If then, the senses had to undergo a spiritual change, so also did the external media.

Today, however, we know that all the sensible qualities take time to pass through their media; we know the speed of sound and even the speed of light. According to St. Thomas' own terminology, therefore, we have to say that all the external media of the senses undergo physical, not spiritual, changes. It should be noted, however, that this fact does not alter his theory of sensation in anything really essential. Whether or not there is a spiritual change in the sense organs we will consider later.

It might also be pointed out here that St. Thomas' insistence on a spiritual change in the external *media* as well as in the *organs* of sense clearly indicates the error of those who interpret the phrase "spiritual change" in the context of sensation to mean a change in the sense power as something distinct from the physical change in the organ. Such an interpretation, as we saw, does not even agree with the letter of what St. Thomas wrote!

4° Taste.

Taste and touch are the least "spiritual" of the senses, since they suppose a physical change in both the object and the sense.³ Flavor is the proper object of taste and the tongue is the organ. It is, then, a distinct sense. Yet its affinity to touch is so close

that St. Thomas calls it a "certain touch." He does this for two reasons: 1) because taste becomes aware of its object by touching it, and 2) because, even though flavor is a proper object distinct from those of any other sense, it is, nevertheless, founded in moisture as in its matter, and moisture is a proper object of touch.⁴

It might seem that since the flavored object and the tongue must be moist to produce a sensation, then moisture is the medium of taste. St. Thomas, following Aristotle, denies this on the ground that taste is a "certain tangible," and, like touch, has no extrinsic medium.⁵ The other senses can know their objects at a distance, but not taste. And even if a body of water were to be flavored by the presence of something sweet in it, the water would still not be a medium because the water would undergo a physical immutation from the flavored object. "Whence," he says, "taste does not perceive the flavor of the distant body, as the flavor of such a body, except insofar as the water is changed by such a body."⁶ And a sign of the natural immutation is that the addition of water weakens the flavor; whereas in a medium such as the transparent, which undergoes a "spiritual" immutation only, the eye perceives color as pertaining to the object and not to the air. Furthermore, a color is not weakened by being seen through its medium, but rather, it appears "according to the same measure" it has in the object. Hence, rather than being the true medium, the wet is related to flavor as light is to color. For just as by light colors become actually visible, by moisture flavors become actually gustable. Consequently, as a distinct sense, taste perceives flavors; but as a "certain touch" it perceives the moist.⁷

The physical change in the organ and the object is two-fold in sensations of taste. First of all, both must be moistened, and, secondly, they must come into physical contact. Like the other senses, taste also requires a "spiritual" change. How this is found in taste will be seen after we have considered the sense of touch.

5° Touch

St. Thomas introduces his discussion of touch by remarking that touch seems to be the least spiritual of all the senses even though it is the foundation of the others.⁸ But touch itself is not one sense but many, since it has for its object many distinct sets of contraries: "hot and cold, wet and dry, hard and soft, and certain others of

1. *Ibid.*, n.458.

2. *Ibid.*, n.454.

3. *Ia*, q.78, a.3, c.

1. *In II de An.*, lect.21, n.504.

2. *Ibid.*, n.502.

3. *Ibid.*, n.506.

4. *Ibid.*, nn.507-510.

5. *Ibid.*, lect.22, n.517.

this kind, heavy and light, sharp and dull, and the like."¹ And even though other senses contain different sets of contraries, theirs are all reducible to one primary and *per se* contrariety which distinguishes one sense from the other. For example, sounds are basically high or low, but they may also be shrill or deep. Nevertheless, even though the different contraries of tangible qualities have no common genus, they pertain to a body precisely as a body. For it is by these qualities that the components of the body are distinguished from one another.²

Psychologists have been able to subordinate some of the species of tangible objects mentioned by St. Thomas, e.g., by reducing the species of touch to the senses of temperature and pressure.

The temperature sense reveals the warmth or coldness of an object relative to the sensory organ. By the sense of pressure or resistance we know the pressure exerted by an outside object upon us relative to the internal pressure of the body. When movement, either of the organ or of the object, is combined with pressure there results the feeling of roughness or smoothness; when temperature sensations concur with pressure sensations the experience of wetness or dryness is produced. Other sensations, such as those of movement of the body and its organs, seem to be reducible to the sense of pressure, while sensations caused by electrical stimulation can be explained as a combination of pain, pressure, and heat. Thus at least two species of touch are recognized today: the temperature sense and the pressure sense, both of which are included in the common genus of the tangible.³ Both these sensations are usually experienced simultaneously; nevertheless, each of them has its own receptors over the surface of the body.⁴

The sense of touch has both an extrinsic and an intrinsic medium, according to Aristotle. The extrinsic medium is either air or water which surround all bodies, even those which are so close that they seem to be touching.⁵ These extrinsic media of the sense of touch, however, in no way hinder sensation, since both air and water — especially when found in small quantities — easily take on extraneous qualities. Consequently, we do not notice the extrinsic media in taste and touch as we do in the other senses. St. Thomas compares the media of the different senses as follows:

... tangibilia differunt a visibilibus et sonantibus, ex eo quod illa sensibilia sentiuntur per hoc quod movent medium, et iterum medium movet.

1. *Ibid.*, n.510.
2. *Ibid.*, n.524.
3. KÜMBERTANZ, *The Philosophy of Human Nature*, pp.108-110.
4. VON BÜDDENBROCK, *The Senses*, p. 124 for tactile sensations, pp.132-133 for heat sensations.
5. *In II de An.*, lect.23, nn.531-532.

nos; sed tangibilia sentiuntur per medium extraneum, non quasi moti a medio extraneo, sed simul cum medio moventur a sensibili.¹

In sensations of touch and taste, we are affected not by the medium but together with it.

St. Thomas then explains how the medium and the organ of touch are moved together by contrasting the movements of the media of the different senses.

Hoc autem quod dicitur "simul" non est intelligendum secundum ordinem temporis tantum; quia etiam in visu simul moventur medium ab obiecto, et sensus a medio; fit enim visio sine successione. Perceptio autem soni et odoris, cum successione aliqua: ... sed hoc referendum est ad ordinem causae. In aliis enim sensibus, immutatio medi est causa quod immutetur sensus, non autem in tactu. Nam in aliis sensibus medium est ex necessitate, in tactu autem quasi per accidens, inquantum accedit corpora se tangentia esse humectata.²

This passage explains quite clearly that in touch (and taste) the extrinsic medium and the sense are moved in the same instant, as was also thought to happen in vision; nevertheless, the movement of the extrinsic medium in touch is not a true cause of the sensation but only an accidental condition. It is important to note, however, that St. Thomas states explicitly that in touch (and taste) the sense and the external medium are changed simultaneously and without succession, that is, instantaneously and "spiritually" as they are in sight.

At this point, Aristotle proceeds to show the necessity of an intrinsic medium of touch and taste. He writes:

In general, flesh and the tongue are related to the real organs of touch and taste, as air and water are to those of sight, hearing, and smell. Hence in neither the one case nor the other can there be any perception of an object if it is placed immediately upon the organ, e.g., if a white object is placed on the surface of the eye. This again shows that what has the power of perceiving the tangible is seated inside. Only so would there be a complete analogy with all the other senses. In their case if you place the object on the organ it is not perceived, here if you place it on the flesh it is perceived; therefore flesh is not the organ but the medium of touch.³

Like all the other senses the organ of touch itself must not possess the qualities which it senses. Touch is in potency to such tangible qualities as hot and cold, wet and dry. Hence the organ of touch must consist of a delicate balance of these contraries. For unlike

1. *Ibid.*, n.543; cf. nn.540-542.
2. *Ibid.*, n.544.
3. *De Anima*, II, c.11, 423 b 18-25.

the other senses, such as sight whose organ is colorless, the organ of touch and its medium cannot be without any heat or cold, moisture or dryness, since it is made of components which have these proper qualities.¹ Consequently, since the organ of touch and the flesh, its medium, naturally possess some degree of heat and since sensation is a passion, in order to sense something hotter or colder, the organ must itself take on the different degree of temperature. In so doing, however, it loses the degree of temperature natural to it. Sensations of touch, therefore, involve a passion in the proper meaning of the word, a motion in the sense of an *actus imperfecti*.

There is, however, a respect in which even touch is spiritual, or instantaneous: touch requires a physical contact that is not engendered. St. Thomas explains this as follows:

Hoc nomen *ingenitum* dicitur tribus modis. Quorum primus est prout dicitur *aliquid ingenitum*, quod *quidem nunc est, sed prius non erat, ita tamen quod hoc contingat sine generatione et transmutatione eius quod esse incipit*; sicut aliqui ponunt exemplum de eo quod est tangi et moveri; dicunt enim quod *tactum et motum non contingit generari*. Et hoc probatum est in *V Physic.*, quia, cum generatio sit quaedam species motus sive transmutationis, si motus generaretur, sequeretur quod mutationis esset mutatio. Sic ergo *tactus et motus, licet esse incipiant, tamen dicuntur ingenita, quia non generantur nec nata sunt generari*.²

This passage, in fact, indicates that touch — and indeed every sensation — is instantaneous and ungenerated. For Aristotle and St. Thomas consider sensation as a passion (*passio*) and as a being moved (*moveri*). Consequently, since there is no motion of motion, the sensation itself, that is, the passion or the being moved of the sense, is instantaneous. In other words, *the mode of the immutation of sense is spiritual*.

St. Thomas does, in fact, state even more explicitly that all sensation is instantaneous. For in discussing whether sensible objects move the medium before the sense itself, St. Thomas says that it would be insufficient to answer the question negatively on the grounds that all sensation is instantaneous. He writes:

Posset enim aliquis putare quod sensibilia non prius perveniant ad medium quam ad sensum, quia sensus simul percipit sensibile absque successione, ita quod in auditione non prius est audire quam auditum esse, sicut in successivis prius est moveri quam motum esse; sed simul dum aliquis audit, jam auditivum, quia in instanti perficitur tota auditio. Et universalius hoc est verum in omni sensu, quod simul scilicet aliquid senti et sensui. Et hoc ideo quia non est generatio eorum, sed sunt absque fieri.³

1. In *II de An.*, lect. 23, n. 548.

2. In *I de Caelo et Mundo*, lect. 24, n. 230; cf. *ibid.*, n. 245.

3. In *de Sen. et Sens.*, lect. 16, n. 228.

He then explains that something can be called generated when it comes into being through successive motions. Thus a form, for example, such as whiteness, is generated inasmuch as it is the term of successive changes. Likewise, fire is said to be generated because the dispositions to burning are acquired through successive alteration as in drying wood. For wood does not burn unless properly conditioned.¹

On the other hand, something can begin to be without generation and without any successive motion in what so comes to be, both in regard to the thing itself which is acquired gradually, and in regard to any successive predispositions. St. Thomas gives as an example of such instantaneous coming into being the fact that you suddenly and without any change in yourself find yourself to the right of someone from the fact that he has put himself at your left. So likewise the air is illuminated instantaneously by the very presence pre-existing change in it a sense begins to sense when the sensible comes into suitable relationship with it. And therefore, at the same time as one is sensing he has already sensed.² Sensation, therefore, is caused instantaneously . . . and "spiritually."

Summary. From this discussion of each external sense it is clear that when St. Thomas speaks of the senses as undergoing a spiritual transmutation he in no way implies that sensible species are spiritual in the way that intelligible species are. On the contrary, a sensible object, such as an odor or a sound, is a physical quality from a natural object: "It is necessary . . . that the sense corporally and materially receive the similitude of the thing which is sensed."³ Because, however, a sensory organ is made up of material components in such a way that it is in potency to receive one kind of sensible quality, the sense is by nature proximately disposed to receive that form. Sensation, therefore, like intellection, is a "common passion" since it is a passion in which no contrary form need be expelled:

... non omnino se habet in sensu et intellectu, sicut in corporibus naturalibus. Corpus enim naturale recipit formas secundum esse naturale et materiale, secundum quod habent in se contrarietatem; et ideo non potest idem corpus simul recipere albedinem et nigredinem; sed sensus et intellectus recipiunt formas rerum spiritualiter et immaterialiter secundum esse quoddam intentionale prout non habent contrarietatem. Unde sensus et intellectus simul potest recipere species sensibilibus contrariorum. Cuius simile potest videri in diaphano, quod in una et eadem sui parte immutatur ab albo et nigro: quia immutatio non est materialis secundum esse naturale.⁴

1. *Ibid.*, n. 220.

2. *Ibid.*, n. 230.

3. In *II de An.*, lect. 12, n. 377; cf. In *de Sen. et Sens.*, lect. 16, n. 142.

4. In *de Sen. et Sens.*, lect. 19, n. 201.

Furthermore, a passion which occurs without the expulsion of a contrary form takes place instantaneously, since no time elapses during which the subject is gradually disposed to receive the new form. Consequently, the passions of sensation and intellection are instantaneous, and so St. Thomas calls them both "spiritual." To avoid confusion, however, we must repeat that the word "spiritual" is analogous. In psychology it is used in its strictest sense only of the rational powers, which have universal objects and do not have an organ. It is used of the senses, which are organic powers, only in reference to the *mode of their immutation* by their proper objects; for the senses, like the intellect, undergo a passion, in the common meaning of the term, which is instantaneous. Accordingly, the less the sense depends on physical immutations, the more it is spiritual.¹

Yet, granted that the explanation presented here is that of St. Thomas, the question must still be raised whether or not this analysis is still valid in the light of modern science. We now know, for example, that nerve impulses take time to pass from the external sense organs to the brain. It might seem then that we can hardly classify the passions of the senses as instantaneous or spiritual today.

We should recall, however, that according to modern physiology each sense is by nature so constructed that it receives only one type of stimulation: the cones of the eye emit an impulse only when stimulated by color, the ear only when struck by sound waves, etc. Each sense, then, undergoes a passion in sensing. Furthermore, a sense organ such as the eye is an organ precisely inasmuch as it can transform a light wave into a nerve impulse, and, *mutatis mutandis*, this applies to all the other senses as well. No sense, therefore, retains its proper sensible and so no contrary quality need be expelled from the organ when it is acted upon. Using St. Thomas' terminology, then, we would say that the senses undergo a passion in the common meaning of the word. Lastly, since it is the nature of a sense organ to generate a nerve impulse immediately upon contact with its proper sensible quality, the sense is proximately disposed to react to its proper object. Thus the passion which the sense undergoes is instantaneous, that is, in St. Thomas' words, the mode of its immutation is spiritual. St. Thomas' analysis, therefore, is certainly valid today, and its significance will be seen more clearly in the following section.

II. SENSATION AS A SPIRITUAL PASSION

The discussion so far has shown what St. Thomas means when he says that a species is received "spiritually" into a sensory organ.

1. *In II de An.*, lect. 14, n. 418; *Ia*, q. 78, a. 3, c.; *Q. D. de An.*, a. 13, c.

It should be kept in mind, however, that to say that a species is received into an organ, as St. Thomas frequently does,¹ is to use the figure of speech synecdoche. For the organ is only part of a sense; the sense itself is a composite, and it is the sense, strictly speaking, which receives the species.²

For man is a composite of matter and form, of body and soul; and since matter is for the sake of form, man's body is organized according to the requirements of his rational soul.³ Consequently, nature provides a corporeal organ for those powers of the soul which cannot be without one. Although endowed with many powers, man has but one substantial form, which is, along with matter, an essential part of the human composite. Therefore, "the whole soul is in every part of the body according to the totality of the perfection of the species." In other words, the soul is the substantial form not only of the body as a whole but of each part as well. According to the totality of its powers, however, the whole soul is not present in every part of the body. Rather the soul is present according to one of its powers in the particular organ which nature provides for the operation of that power. More simply, an organic power of the soul, which is not the soul itself, is said to inform its organ. Consequently, a sense, such as sight or hearing, is composed of a power of the soul and its organ. Therefore, St. Thomas says, "the power is the quasi form of the organ."⁴ Since matter exists for form, and an organ for its power, the sense organ is made of such components as render it a suitable instrument for the reception of one type of sensible form. Consequently, he adds, "Sense is a certain ratio, that is proportion (of the material components), and a form and power . . . of a magnitude."⁵ And precisely because the power and the organ form a unit, any serious damage to the organ destroys the sense.⁶ It is, furthermore, the sensory composite which acts: "... the act (of sensation) does not belong to the power alone, but to the composite of power and corporeal organ."⁷

Strictly speaking, even this manner of expression is by way of synecdoche, since actions are attributed to the supposit. Hence, to be perfectly exact one should say that *man* acts through his senses. However, for the sake of simplicity, St. Thomas frequently uses synecdoches, and so do we.

1. *In de Sen. et Sens.*, lect. 2, n. 20.

2. *In III de An.*, lect. 7, n. 685.

3. *Q. D. de An.*, a. 8, c.; ad 1.

4. *In II de An.*, lect. 24, n. 555; cf. *Ibid.*, lect. 12, n. 377; *III*, lect. 7, n. 684.

5. *Ibid.*, II, lect. 24, n. 555.

6. *Ibid.*, n. 556; *III*, lect. 7, n. 688.

7. *Ibid.*, *III*, lect. 7, n. 685.

If, therefore, we say that it is the sense which receives the species and the sense which acts, what precisely is the relationship between the reception and the act? In other words, what is sensation?

1° "*Sentire est quoddam pati*"

St. Thomas describes sensation in both passive and active terms, such as *pati*,¹ *moveri*,² *actus*,³ *motus*,⁴ *actus perfecti*,⁵ *usus*,⁶ *esse in actu*,⁷ *agere*⁸ and *operatio*.⁹ As a result of this proliferation of descriptions many modern Thomists describe sensation as an immanent operation that follows upon the reception of a species in the sense. This explanation is reported by Father Gardail:

We have... to remember that in the process of sensation there are two phases: the passive phase, in which the sense is informed and determined to the external object; and the active phase, which properly constitutes the act of knowledge, and in which the informed faculty determines itself. This is how the commentators in general explain the matter...¹⁰

Likewise, Father Klubertanz says that "knowing is... an activity, a dynamism, an operation."¹¹ He speaks of a species as a "prerequisite for intentional activity"¹² and says that the species is "the inhering formal cause from which knowledge proceeds. The formal principle is a cause, the act of knowing is an effect."¹³

A similar explanation is given by Father Koren, who writes:

The mere reception of an impressed species is not yet cognition. For this reception is purely *passive* on the part of the receiving potency, while cognition is action.

1. *Ibid.*, II, lect.10, n.350; III, lect.7, n.675.
2. *Ibid.*, II, lect.10, n.350.
3. *Ibid.*, III, lect.2, n.593.
4. *Ibid.*, lect.12, n.766; *In de Sen. et Sens.*, lect.17, n.261.
5. *In III de An.*, lect.12, n.766.
6. *In de Sen. et Sens.*, lect.17, n.261.
7. *In II de An.*, lect.10, n.356.
8. *Ibid.*
9. *In III de An.*, lect.12, n.766; *In de Sen. et Sens.*, lect.17, n.261.
10. H. D. GARDEIL, O.P., *Introduction to the Philosophy of St. Thomas Aquinas: Psychology*, trans. John A. Otto (St. Louis: B. Herder Book Co., 1959), pp. 53-54. Cf. the remainder of this section (no.2) where he attributes the physical change to the sense organ and the intentional change to the sense power. Read also the explanatory footnote (no. 10) of the Translator.

11. KLUBERTANZ, S.J., *The Philosophy of Human Nature*, p. 71.
12. *Ibid.*, p.74.
13. *Ibid.*, p.75.

"SPIRITUALITY" AND SENSATION

The *physical* change which occurs in cognitive sense organs is not the impressed species of sense cognition. Such physical changes may be prerequisite, but they belong to the material order.¹

Later on he defines cognition as "an immanent action by which the form of an object is had immaterially."² He also states explicitly: "The external senses are passive in the sense that they need to be acted upon before being fully ready to elicit their act of sensation."³

This interpretation of sensation seems to find support in many passages of St. Thomas, for example: "This motion (i.e. of sensation) is an act of what is perfected: for it is the operation of a sense already rendered in act by its species."⁴ On the other hand, however, if St. Thomas thought of sensation as an activity or operation produced by a sense informed by a species, how then could he repeatedly state that sensation *consists in a passion and is completed in a passion*? He writes:

... sentire consistit in moveri et pati.⁵ ... sentire consistit in quodam alterari et pati.⁶ ... cognitio sensus perfectitur in hoc ipso quod sensus a sensibili moveatur.⁷ Anima igitur sensitiva non se habet in sentiendo sicut movens et agens, sed sicut id quo potens patitur.⁸ ... si vero operatio illa consistit in passione, adest ei principium passivum, sicut patet de principis sensitivis in animalibus.⁹ ... sensum affici est ipsum eius sentire.¹⁰ ... sentire perfectitur per actionem sensitivam in sensum.¹¹ ... duplex operatio. Una secundum solum immutationem, et sic perfectitur operatio sensus per hoc quod immutatur a sensibili.¹² ... cognitio sensus exterioris perfectitur per solum immutationem sensus a sensibili.¹³

The answer to this apparent contradiction is that, for St. Thomas, "operation" and "action" do not always mean the exercise of an

1. Henry J. Koren, C.S.B., *An Introduction to the Philosophy of Animal Nature* (St. Louis: B. Herder Co., 1959), p.98.
2. *Ibid.*, p.101.
3. *Ibid.*, p.117.
4. *In II de An.*, lect.12, n.766.
5. *Ibid.*, II, lect.10, n.350.
6. *Ibid.*, lect.13, n.393.
7. *In IV Sent.*, d.50, q.1, a.4, sol.
8. *Cont. Gent.*, II, c.57, "sed hoc esse..."
9. *Ibid.*, c.76, "Tamen. In natura..."
10. *Id.*, q.17, a.2, ad 1.
11. *Ibid.*, q.27, a.5, c.
12. *Ibid.*, q.85, a.2, ad 3.
13. *Quodlib.* V, q.5, a.2, ad 2. This series of texts has been taken from Bernard J. F. Lonergan, S.J., "The Concept of Verbum in the Writings of St. Thomas Aquinas," *Theological Studies*, VIII (September, 1947), p. 435. Although primarily concerned with the intellect, this article treats many terms which St. Thomas uses in the context of sensation.

efficient causality that produces something other than and in addition to the operation, but can refer simply to a "kind of being in act." Consequently, the senses are actuated in the sense of "actus perfecti," simply by receiving the species from the sensible object; and so the act or operation of sense consists in a passion. St. Thomas explains this unambiguously:

Videbatur enim repugnare, quod sentire dicitur in actu, ei quod dictum est, quod sentire est quoddam pati et moveri. Esse enim in actu videtur magis pertinere ad agere. Et ideo ad hoc exponendum dicit quod *ita dicimus sentire in actu, ac si dicamus, quod patitur et movetur sint quoddam agere, id est quoddam esse in actu*. Nam motus est quidam actus, sed imperfectus... Est enim actus existentis in potentia, scilicet mobilis. Sicut igitur motus est actus, ita moveri et sentire est quoddam agere, vel esse secundum actum.¹

Sensation, therefore, is an operation inasmuch as the sense possesses a species in act. The operation consists in the actual possession of the species, for operation here simply means that the sense is in act. As a consequence, St. Thomas identifies the operation of sense with the passion, as in saying that since nature provides suitable principles for operation, when the operation is an action, the principle is an active power; but when the operation is a passion the principle is a passive power:

Item. In natura cuiuslibet moventis est principium sufficiens ad operationem naturalem eiusdem: et si quidem operatio illa consistat in actione, adest ei principium activum, sicut patet de potentia animae nutritivae in plantis; si vero operatio illa consistat in passione, adest ei principium passivum, sicut patet de potentia sensitiva in animalibus.²

If "operatio," when used of the senses, signifies that the sense is actuated in undergoing a passion, so, too, does the word "actio."

Dicit ergo (Aristoteles) primo, quod in libro de Anima dictum est de sensu et sentire, id est de potentia sensitiva et actu eius... Vocat autem sentire passionem, quia actio sensus in patiando fit... Quid autem sit sensus, et quare animalia sentiant, ostendit circa finem secundi de Anima; per hoc scilicet quod animalia recipere possunt species sensibilibus sine materia.³

St. Thomas likewise interprets in a similar way the word "motus" when used of sensation:

1. *In II de An.*, lect. 10, n. 350.
2. *Cont. Gent.*, II, c. 76, "Item. In natura..."
3. *In de Sen. et Sens.*, lect. 2, n. 19. Cf. *In III de An.*, lect. 2, n. 588; and LONERGAN, "The Concept of Verbum..." pp. 416-417.

Unde, cum operatio sensitiva nihil aliud sit quam usus quidam quo anima utitur potentia sensitiva, erit motus quidam ipsius potentiae, in quantum sensus movetur a sensibili.¹

In the light of this discussion the interpretation of sensation given by many Thomists clearly is not that of St. Thomas himself. For him, at least, external sensation is not an operation caused by and distinct from the reception of a species in the sense. It is, rather, the passion itself which the sense undergoes in being put into act by the reception of a species. Thus for him "the knowledge of an external sense is completed solely by the immutation of the sense by the sensible."²

2° An interpretation of certain texts.

In his commentary on Aristotle's *De Sensu et Sensato*, St. Thomas seems to say just the opposite.

Ipsa autem visio secundum rei veritatem non est passio corporalis, sed principalis eius causa est virtus animae...

Sciendum tamen quod praedicta apperitio (the reflection of an object formae quae est visionis, est corporalis, non enim visio est actus animae nisi per organum corporeum: et ideo non est mirum si habeat aliquam causam ex parte corporeae passionis; non tamen ita quod ipsa corporea passio dicam, percussione formae visibilibus ad oculum...)

... Sed in oculo est aliquid aliud, quod visionem causat, scilicet virtus visiva.³

These passages state explicitly that vision is not the corporeal passion and that the principle cause of vision is the power of the soul. Many Thomists see here a basis for interpreting St. Thomas' theory of sensation in terms of a passive and an active phase.⁴ Seeing that such an interpretation appears foreign to the statements of St. Thomas quoted earlier, how can these other passages be explained?

First of all, it should be noted that in the texts just quoted St. Thomas does say that the corporeal passion, in which the form of the visible thing first strikes the eye, is a certain cause of vision. He further remarks that because vision is an act of the soul (a synecdoche) using a corporeal organ, it is no wonder that vision involves a corporeal passion. Even in these passages, then, the physical passion is a cause of sensation.

1. *In de Sen. et Sens.*, lect. 18, n. 261.
2. *Quodlib.* V, q. 5, a. 2, ad 2.
3. *In de Sen. et Sens.*, lect. 4, nn. 50-52.
4. Cf. GARDETT, *Psychology*, p. 53.

Nevertheless, to say that the physical passion is a cause of sensation is not to say, as we saw earlier, that "knowledge of an external sense is completed solely by the immutation of the sense by the sensible."¹ Yet there is no real opposition here. We believe that the "power of the soul which is the principle cause of vision" refers to the common sense or to the power of sight as participating in the common sense. In this way, the knowledge of the external sense as such is completed in a passion, but the awareness of that sensible passion cannot occur without the common sense, the "first and common principle" of sensation.² To prove this position, however, it must be shown that in the passages quoted above, St. Thomas actually refers to the common sense in saying that the "principle cause" of vision is "the power of the soul" and even where he says that "the power of vision" in the eye causes vision.

St. Thomas says that a sense is composed of a power and an organ and that the power is present in the organ. On the other hand, he also says that the *virtus visiva* or the *anima sive sensitivum animale* is not in the outer surface of the eye but rather that "the principle of vision is internal near the brain, where the two nerves proceeding from the eyes are joined together."³ From this, it might seem possible to conclude that by *virtus visiva* and principle of vision, St. Thomas must mean the common sense. However, St. Thomas considers the organ of sight to include not only the eyes but the internal nerves as well. Consequently, when he says that the principle of vision is not in the eye but internal near the brain, he is not placing the *virtus visiva* outside the organ of sight. Furthermore, the seat of the common sense was not, to his mind, near the brain, but near the heart.⁴ Therefore, if it is to be shown that by *virtus visiva* St. Thomas means the common sense, another line of argument must be found.

This argument is to be found in the discussion of the common sense in St. Thomas' commentary on the *De Anima*. For there he notes that "to see" may mean the immutation of the eye by color or it may mean the awareness we have of sensing color. He writes :

Sentire ergo visu dupliciter dicitur. Uno modo, secundum quod visu sentimus nos videre. Alio modo, cum visu videmus colorem. . . . Redit ergo solutio ad hoc, quod actio visus potest considerari, vel secundum quod consistit in immutatione organi a sensibili exteriori, et sic non sentitur nisi color. Unde ista actio, visus non videt se videre. Alia est actio visus secundum quam, post immutationem organi, iudicat de ipsa percep-

1. *Quodlib.* V, q.5, a.2, ad 2.

2. *In de Sen. et Sens.*, lect. 19, n.288.

3. *Ibid.*, lect.5, n.64.

4. *In III de An.*, lect.3, n.611 ; *In de Sen. et Sens.*, lect.5, nn.75-76.

tione organi a sensibili, etiam abeunte sensibili : et sic visus non videt solum colorem, vel sentit, sed sentit etiam visionem coloris.¹

It is, of course, by the common sense that we are aware of the immutations of the external senses.² Yet in the text just quoted, St. Thomas does not hesitate to say that "by sight we sense that we are seeing." The reason he can call the common sense the power of sight is this : "Potentia ergo illa, qua videmus nos videre, non est extranea a potentia visiva, sed differt ratione ab ipsa."³ All the senses, therefore, somehow share in the common sense, and they do so inasmuch as they are all powers of the one sensitive soul :

Unde intelligendum est, quod anima, idest sensus communis, unus numero existens, sola autem ratione differens, cognoscit diversa genera sensibilia, quae tamen referuntur ad ipsum secundum diversas potentias sensuum propriorum.⁴

Notice, then, that the power by which we see that we see, namely, the common sense, is not foreign to, is not really other than, the power of sight, but differs from the latter *sola ratione* ; whereas they are nonetheless the same power *subiecto* or *re*. These powers differ in notion, but not as one thing from another ; while their difference in notion, that is according to their definitions, is based upon a reality that is one and the same subject. If these powers differed more than in notion, if they differed by their subjects, we could never see that we see, nor hear that we hear ; we would see without knowing it, which is the same as not to see, like a mirror reflecting an image. Accordingly, when stressing the unity of sense operations, Aristotle and St. Thomas sometimes expressly attribute the operations of the external senses to the common sense, as in the following passage :

Considerandum autem est hic, quod ubicumque sint diversae potentiae ordinatae, inferior potentia comparatur ad superiorem per modum instrumenti, eo quod superior movet inferiorem. Actio autem attribuitur principali agenti per instrumentum, sicut dicimus, quod artifex secat per serram. Et per hunc modum Philosophus dicit quod sensus communis sentit per visum et per auditum, et alios sensus proprios, qui sunt diversae partes potentiales animae.⁵

Accordingly, since the common sense is at work in the sensations of each proper sense, when speaking of a particular sense St. Thomas does not hesitate to refer to the common sense and its function under

1. *In III de An.*, lect.2, n.588.

2. *Ia*, q.78, a.4, ad 2m.

3. *In III de An.*, lect.2, n.591.

4. *In de Sen. et Sens.*, lect.19, n.293.

5. *Ibid.*, n.287.

the name of the particular sense. Thus it is, that in the text quoted earlier, St. Thomas says that "by sight we sense that we are seeing."¹

In the light of this discussion, therefore, it would seem that when St. Thomas distinguishes vision from the corporeal passion in which light strikes the eye, he understands by "vision" the awareness of the passion of the external sense. And, likewise, when he says that the reason things which reflect an image do not see, whereas the eye does, is that there is in the eye a power of sight which causes vision, he means by "power of sight" the proper sense as participating in the common sense.

In these passages, therefore, St. Thomas says nothing contrary to what we have already established, namely, that "knowledge of an external sense is completed solely by the immutation of the sense by the sensible."² But if the knowledge of an external sense, precisely as an external sense, consists in a passion of that sense, there must also be an awareness of it. This awareness is achieved inasmuch as the common sense is moved by the external senses, "since the operations of the proper senses are referred to the common sense as to the primary and common principle."³ Understood in this way, the common sense is the "power of the soul" which is the "principle cause of vision."⁴

There is no basis, therefore, for interpreting these passages to mean that sensation implies an operation distinct from the passion of the senses. On the contrary, the evidence established by our previous discussions favors our interpretation of the texts under discussion. So, too, does the immediate context. For St. Thomas offers this comment on Democritus' position that the organ of sight is composed of water :

Sciendum tamen quod visio attribuitur aquae non secundum quod est aqua, sed ratione perspicuitatis, quae communiter in aqua et aere invenitur.⁵

By "vision" St. Thomas clearly means the reception of light and color into what is transparent. Since the pupil is transparent, it likewise undergoes a similar passion is seeing. Hence, in the passage quoted above, when St. Thomas denies that vision is the corporeal passion, he clearly means that to have a *sensation* of vision we must be aware of the sensory passion. And for this, the principle cause of vision is the common sense, which provides sensory awareness.

1. *In III de An.*, lect. 2, n. 588.

2. *Quodlib.* V, q. 5, a. 2, ad 2.

3. *In de Sen. et Sens.*, lect. 19, n. 288.

4. *Ibid.*, lect. 4, n. 50.

5. *Ibid.*, n. 53.

This same conclusion can be reached by considering attentively another passage in which St. Thomas says even though the mover is more noble than the moved, the common sense is not less noble than the proper senses because moved by them, nor is the proper sense less noble than the sensible objects because moved by them. The object, however, is more noble than the proper sense relatively speaking, since the object is in act what the sense is in potency. Then he continues :

Sed sensus proprius simpliciter est nobilior (quam sensible exterius) propter virtutem sensitivam, unde et nobiliori modo recipit sine materia : omne enim recipiens aliquid, recipit illud secundum suum modum. Et sic sensus communis nobiliori modo recipit quam sensus proprius, propter hoc quod virtus sensitiva consideratur in sensu communi ut in radice et minus divisa. Neque oportet, quod per aliquam actionem sensus communis species recepta in organo fiat in ipso : quia omnes potentiae partis sensitivae, sunt passivae ; nec est possibile, quod una potentia sit activa et passiva.¹

This passage makes it clear that the power of sensing which the proper senses have comes from the common sense in which all sensitivity is rooted. This statement provides us with a clear interpretation of the passage from St. Thomas' commentary on the *De Sensu et Sensato* quoted earlier, namely : "in oculo est aliquid quod visionem causat, scilicet virtus visiva." The *virtus visiva* is not to be interpreted as an acting cause producing the sensation, as some would have it ; rather the *virtus visiva* is the common sense which provides awareness to all the sensory powers and so is the principle cause of vision, etc.

Furthermore, this passage from the *De Anima* also states explicitly that all the sensitive powers are passive, both the proper senses and the common sense, and that it is impossible for the same power to be both active and passive.

Finally, there is a passage from the *Summa Theologica* which expressly states that vision is completed in the reception of a sensible form into the sense, and that the awareness of that reception is due to the common sense :

... 2 (sensu communi) ... percipiuntur intentiones sensuum sicut cum aliquid videt se videre. Hoc enim non potest fieri per sensum proprium, qui non cognoscit nisi formam sensibilibus a quo immutatur ; in qua immutatione perficitur visio, et ex qua immutatione sequitur alia immutatio in sensu communi, qui visionem percipit.²

3° Significance of this interpretation.

This discussion has been critical. For it is only by understanding St. Thomas views on the physical, organic side of sensation

1. *In III de An.*, lect. 3, n. 612.

2. *Ia*, q. 78, a. 4, ad 2.

that we can hope to grasp its intentional aspects as he understood them. In fact, it is precisely by neglecting his ideas of the physiology of the senses that many Thomists have been led to maintain that he assigned no more than an accidental function to the organ and so made the essence of sensation consist of an intentional change in the power. As we saw, support for this interpretation has been found in the distinction which St. Thomas makes between the natural changes in the organ which some senses undergo, as when the eye gets hot or cold, and the spiritual change which he says is essential. Thomists interpret these accidental physical changes in the organ to mean any physical change in the organ. They are then compelled to modernize St. Thomas by pointing out that today we know that there is a physical change in every act of sensation and not just in some of them. Nevertheless, they insist that such physical changes are accidental and that the intentional change in the power is what really matters. The connection between these two changes is saved by saying that the spiritual change cannot come about except through the physical change of the organ, which then becomes a *conditio sine qua non* of sensation but not its cause. The cause of sensation is the species which is received into the sense power. Just what this species is, however, outside of being an intentional, re-presentational form is not explained.

Furthermore, by minimizing the physical side of sensation, it becomes extremely difficult to show how sensation is in fact different from intellection. According to St. Thomas himself the sensible form is individuated inasmuch as it exists in a singular material object and inasmuch as it is received into a material sense organ. He writes :

Sensus est virtus in organo corporali. . . . Unumquodque autem recipitur in aliquo per modum sui. Cognitio autem omnis fit per hoc, quod cognitum est aliquo modo in cognoscente, scilicet secundum similitudinem. Nam cognoscens in actu, est ipsum cognitum in actu. Oportet igitur quod sensus corporaliter et materialiter recipiat similitudinem rei quae sentitur. . . . Individuatio autem naturae communis in rebus corporaliibus et materialibus, est ex materia corporali, sub determinatis dimensionibus contenta. . . . Manifestum est igitur, quod similitudo rei recepta in sensu representat rem secundum quod est singularis ; . . . et inde est quod sensus cognoscit singularia.¹

According to many Thomists, however, the sensible species is not received corporally and materially into the sense but immaterially into the power, for the organ has a function which is purely accidental. How, then, can the species received into a power of the soul

be individuated? It would seem that such a species would be like an intelligible species which represents a thing according to its universal nature because it is received into the intellect "incorporally and immaterially."¹ Obviously, the sensible species is individuated but these Thomists, unlike St. Thomas himself, cannot explain how. They simply put the sensible species in a category all by itself : it is said to be "immaterial," that is, it is not in matter but has some of the characteristics of a form in matter.

Furthermore, the unity of the sensory power of the soul and its organ is difficult to understand. After all, the nature of anything is known by its operation, and if sensation is essentially an immaterial activity involving a physical transmutation of the organ only as a prior condition, then the sense is essentially a power of the soul and the organ is no more than an accidental appendage.

St. Thomas' position is much more realistic and intelligible. The species is the physical quality received "corporally and materially" into the sense from the object sensed, as we just saw. Since this form exists in a material subject in both instances, its individuality is accounted for sufficiently. The individuality of the species existing in the sensory organ is not unlike the individuality of a snapshot image, which is present there in proportions similar to those of the object in reality. There is, then, no need to institute a new category, "the immaterial" to classify sensible species.

St. Thomas also insists that in sensing, the sense undergoes a passion in the common meaning of that term. For precisely because ordained to a power of the soul, the sense organ is composed of that material element which is itself lacking the proper sensible quality and in potency to it.² Thus because the eye is colorless and the ear soundless, they are in potency to receive their own proper sensibles. Furthermore, since the sense organ does not of itself possess its proper sensible, no contrary quality need be expelled when the sense is acted upon by its proper object ; as a consequence, no time is required for the sense to be disposed to receive this quality : the change is instantaneous. Therefore, St. Thomas maintains that the mode of the im-mutation of the sense is spiritual.

Why does St. Thomas insist so vigorously on sensation as a common passion in a spiritual mode? The reason is not hard to find. For when it undergoes a proper passion, the subject itself first possesses a contrary quality, which must be expelled before the new quality can be acquired. Thus the matter of the subject must be disposed before it can take on the new quality, and the disposing of the subject takes time. It is in this way, for example, that water takes on heat from the fire. Furthermore, in being changed in this way,

1. *Ibid.*

2. *Ibid.*, III, lect. 1, n. 571.

the subject takes on the new quality as its own and retains it after the agent has been removed, as water retains its heat after being removed from the flame. Sensation could not be explained adequately in such terms. For sensation is instantaneous: when we look at an object we see it immediately; when we shift our gaze to something else, we see that object immediately and clearly and without any "double exposure" from the prior object. If sensation were a proper passion, the senses would be subject to such after effects and our sensation would be constantly obscure and not sharp and clear as we experience it.

Similarly, if sensation consisted in a proper passion and so retained the sensible form after the object has been removed, then the objectivity of our sense knowledge would be in jeopardy: we would have no way of determining whether what we are now sensing is actually there. Since, however, sensation is a common passion which takes place in a spiritual or instantaneous way, then the sensation occurs only in the actual presence of the sensory object, and so the objectivity of our sense knowledge is secure.

By paying attention to St. Thomas' insistence that sensation is a common passion, we can also understand more easily how in sensing a sense takes on the form of the thing sensed without its matter. It may be recalled that in explaining Aristotle's example of wax taking on the form of the signet-ring without its matter, St. Thomas raises the objection that every agent communicated its form and not its matter to the patient. In answer to this objection he writes:

Dicendum igitur, quod licet hoc sit omni patienti, quod recipiat formam ab agente, differentia tamen est *in modo recipiendi*. Nam forma quae in patiente recipitur ab agente, quandoque quidem habet eundem modum essendi in patiente, quem habet in agente: et hoc quidam contingit, quando patientis habet eandem dispositionem ad formam quam habet agens: quodcumque enim recipitur in altero secundum modum recipientis recipitur. Unde si eodem modo disponatur patientis sicut agens, eodem modo recipitur forma in patiente sicut erat in agente; et tunc non quae est agentis, non fiat patientis, fit tamen quodammodo eadem, in quantum similem dispositionem materiam ad formam acquirit ei quae erat in agente. Et hoc modo aer patitur ab igne, et quicquid patitur passione naturali.

Quandoque vero forma recipitur in patiente secundum alium modum essendi, quam sit in agente; quia dispositio materialis patientis ad recipiendum, non est similis dispositioni materiali, quae est in agente. Et ideo forma recipitur in patiente sine materia, in quantum patientis assimilatur agenti secundum formam, et non secundum materiam. Et per hunc modum, sensus recipit formam sine materia, quia alterius modi esse habet forma in sensu, et in re sensibili. Nam in re sensibili habet esse naturale, in sensu autem habet esse intentionale et spirituale.

... Assimilatur enim sensus sensibili secundum formam, sed non secundum dispositionem materiae.¹

In the light of the preceding analysis of the organic structure of the senses as Aristotle and St. Thomas conceived it, we can see clearly why the senses need not be disposed to receive the form of the sense object. Constructed of the element which is "easily im-muned by the sensible object,"² the sense organs are, like the diaphanum, "always in the ultimate disposition to form"³ and so they are transmuted instantaneously. Consequently, in order to receive their proper sensible forms the sense organs need not be disposed by the senses: the change is instantaneous or spiritual. Thus St. Thomas says in the passage quoted above that "a sense receives a form without matter, because a form has a mode of being in a sense which is different from its mode of being in the sensible object. For in the sensible thing it has natural being; in the sense, however, it has intentional or spiritual being. . . . For the sense is assimilated to the sensible according to form but not according to the disposition of matter."

After this lengthy analysis we are also in a better position to understand what St. Thomas means when he says that "the act of any sense is one and the same in subject with the act of the sensible, but not one in notion."⁴ For the sensible object, precisely as an object able to be sensed, is actually being sensed only while it is actually affecting a sense organ. Thus it is the one form in the sense organ which makes the sensible actually sensed and the sense actually sensing. Yet this one act can be distinguished as from an agent, and in a patient. St. Thomas writes:

Sicut enim actio et passio est in patiente, et non in agente, ut subiecto, sed solum ut in principio a quo, ita tam actus sensibilis quam actus sensitivi, est in sensitivo ut in subiecto.⁵

St. Thomas draws an immediate conclusion from this truth:

... quia actus sensibilis et sensitivi est unus subiecto, sed differunt ratione . . . necesse est quod auditum secundum actum, et sonus dictus secundum actum, simul solvantur et corrumpanitur: et similiter est de sapore et gustu, et aliis sensibilibus et sensibus. Sed si dicantur secundum potentiam, non necesse est, quod simul corrumpanitur et salventur.⁶

1. *In II de An.*, lect. 24, nn. 552-554.

2. *Ibid.*, III, lect. 1, n. 571.

3. *Ibid.*, II, lect. 14, n. 421.

4. *Ibid.*, II, lect. 2, n. 504; cf. *Ibid.*, n. 500.

5. *Ibid.*, n. 593.

6. *Ibid.*, n. 594.

Accordingly, because the sense is a passive power which senses only *while* the object is acting upon it, then the act of the sense and the sensible begin and end simultaneously. This, of course, presupposes that sensation is a passion and not an activity which the sense, once acted upon, elicits, and also that sensation is a passion commonly so called. For if sensation consisted in a proper passion, the sense would retain the form of the object sensed after the object itself were removed. Thus, the act of the sense and the sensible would not be coextensive in time, as in fact they are.

Furthermore, since the sense undergoes a passion in the common meaning of the term, the form is in no way modified or weakened by being received into the organ. For the object does not have to dispose the sense organ: the organ is proximately disposed by nature to receive its proper sensible form. The senses, then, if they are healthy, register their proper sensible forms exactly as they are received from material objects through their different media. As we saw earlier, the media of certain senses may modify the proper sensible, as the flesh of the hand is itself warmed when in contact with something hot, but the sense itself registers the impression exactly as received. The sensible form, then, more perfectly represents the sense object the less it is subject to physical changes. Thus, according to St. Thomas, sight is the most perfect of the senses because color from the visible object reaches the eye with no physical change, neither in the object nor in the medium. Sight, then, is the most objective of the senses. Touch, on the other hand, involves a physical change in the object and in the medium, for the temperature of both the object and the flesh is changed upon contact. Accordingly, touch is the most material of the senses and the most "subjective," in the sense that our judgment of the temperature of an object will vary with the temperature of our body, as anyone who has experienced the burning sensation of thawing out his frozen fingers in a warm room can testify.

In conclusion, we can see from this long discussion that there is no basis in St. Thomas' own writings for distinguishing a physical change in the sense organ and a spiritual or intentional change in the corresponding power of the soul. Such a bifurcated explanation of sensation is full of obscurities and inconsistencies. It is in fact very similar to Plato's theory of sensation, which St. Thomas summarizes in these words:

Sensum etiam posuit (Plato) virtutem quandam per se operantem. Unde nec ipse sensus, cum sit quaedam vis spiritualis, immutatur a sensibilibus: sed organa sensuum a sensibilibus immutantur, ex qua immutatione anima quodammodo excitatur ut in se species sensibilibus formet. . . . Sic igitur secundum Platonem opinionem, neque intellectualis cognitio a sensibili procedit, neque etiam sensibilibus totaliter a sensibilibus rebus;

sed sensibilia excitant animam sensibilem ad sentiendum, et similiter sensus excitant animam intellectivam ad intelligendum.¹

St. Thomas rejects this explanation on the grounds that the sensitive powers of the soul have no operation apart from the bodily organs and that sensation is not an act of the soul alone but of the composite. And, as we saw earlier, the act or operation of the sense consists in its undergoing a passion.

It would be interesting to continue this search in order to see the function of the soul and the common sense in sensory awareness, to discover the role which St. Thomas assigns to touch as basic to the senses and the sense appetites, and to investigate in detail how his teaching corresponds with modern science. But all this would far exceed the scope of this present article. For our aim has been merely to re-establish some basic points about sensation as St. Thomas conceived it, namely, (1) that it consists in a passion of the same organ; (2) that when moved by its proper object every sense organ, by reason of its very structure, undergoes a passion in the common meaning of the word; (3) that this common passion takes place instantaneously and so is spiritual in its mode. Consequently, there is no solid basis in St. Thomas' own writings for distinguishing a spiritual change in the sensory power of the soul and a physical change in the organ. For St. Thomas, as least, they are one.

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1. *Ibid.*, I, 84, a. 6, c.

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There still remains, however, one major problem to be considered, viz., how explain the intentionality of the senses. This problem will be treated later, after a discussion of the common sense.

¹Sum. Theol., I, q.84, a.6c.

