Nature—A Purposive Agent

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Introduction

i. The Problem

THOSE WHO FOLLOWED long custom and called this organization of life (system-forming character of vital phenomena) 'purposive' were wont to ask what end or function an organ has. In their notion of purpose, however, they seemed to conceive of a will and an aiming at a goal, and this is a way of thinking of which the natural scientist is rightly out of sympathy.[1]

This quotation shows the particular viewpoint we are taking in our discussion of purpose in nature. It seems to me that Mr. Bertalanffy's words sound out the keynote of the problem. On the one hand, the facts of experience definitely argue for finality in natural operations; on the other, if we draw such a conclusion it seems that we must admit of an intelligence or conscious purpose in natural beings. Because the latter position cannot be supported, it appears that our first inference is untenable. It is readily seen, however, that we may maintain that nature acts for a purpose, and yet not be called upon to establish empirically that, through their activities, natural beings achieve certain results that are good for them and perfect them. This can be taken as granted since students of nature see in the experimental facts a hard case for finality. Rather our task would be to show that a natural being can act purposively without possessing the powers of intellect and will. This is what we will attempt to do in the light of the teachings of Aristotle and St. Thomas.

[1] L. Von Bertalanffy, "Theoretische Biologie," cited by E. Cassirer, *Problem of Knowledge* (New Haven, 1950) p. 215.

It must be said that this paper is addressed immediately and primarily to those in the scholastic tradition. It is written with the hope that what is discussed may be of some help, however, small, to a Thomistic philosopher of nature interested in bringing about a closer *rapprochement* between his field and that of the experimental scientist, and who is more capable of translating his ideas into the language of experimental science than is the present author.

ii. Nature

A proper approach to our problem presupposes a knowledge of Aristotle's basic ideas on 'Nature.'[2] A summary may freshen our understanding of them. Aristotle has given five principal meanings to the word "nature."[3] The first two—"nature" as the *generation of living beings*, and "nature" as the *principle* of their generation—are significant in this that they represent steppingstones in our progress from a confused to a distinct knowledge of what nature is. Through them we come to the third and proper definition of nature, which is: *A source or cause of being moved and of being at rest in that to which it belongs primarily in virtue of itself and not in virtue of a concomitant attribute.* Since the source or principle of movement and rest may be either active or passive (because something may move or be moved), we have the foundation for the last two impositions of "nature"—*matter* is nature as the passive principle, and *form* is nature as the active principle.

An investigation of the parts of the definition of nature reveals:[4] that nature is an *intrinsic* principle of movement, and thus natural beings are set off from artificial things whose principle of movement is extrinsic; that it is an intrinsic principle of the *substantial order*; that, since every particular movement

[2] II *Phys.*, 1, 192b8-193b22; *Meta.*, Δ, 4, 1014b16-1015a19; St. Thomas, *In II Phys.*, 1; *In V Meta.*, 5.

[3] *Meta.*, Δ, 4, 1014b16-1015a5.

[4] *In II Phys.*, 1, n. 5.

is toward a particular result or place, nature means *determination to one.*

If we consider to what things the definition of nature is applied, we find that in general it applies to any being that has an active or passive principle of movement and rest; any being that has either principle or both will be called natural or mobile. However, the word "primarily" [5] in the definition of nature

[5] "He says *in which it is* in order to differentiate it (i.e., nature) from the principle of artificial things in which motion is found only accidentally. He adds *primarily* because, although nature is the principle of motion of composite things, it is not the principle primarily. Thus the fact that the animal is moved downward is not caused by the nature of the animal as animal but by the nature of the dominating element." *In II Phys.*, 1, n. 5, trans. R. Kocourek, *Introduction to the Philosophy of Nature* (St. Paul, 1948). The phrase *by the nature of the dominating element* indicates what we are about to point out, namely, that the *primarily* of the definition refers principally to the intrinsic principle of the most fundamental movement in any natural being. This is contrary to the opinion of John of St. Thomas (hereafter abbreviated to J. S. T.): cf. *Cursus Philosophicus*, ed. B. Reiser (Turin, 1930) II, p. 173a. Yet it seems evident that *nature* is an analogous word whose common meaning (*ratio communis*) is an *intrinsic principle of operation determined to one* but whose proper sense (*ratio propria*) is the *intrinsic principle, determined to one, of the movement that is common and fundamental to all mobile beings.* To confirm this interpretation, we cite *In II De Anima*, 7, n. 310, where in giving the order of the powers of the soul St. Thomas claims *first* place for the vegetative powers because these are the *foundation* of all the others and *common* to all living beings: "Now this principle (i.e., the vegetative) should be discussed first; because, whenever it coexists in one subject with the other parts of 'soul,' it is as it were their *foundation*; for through its activities physical reality, underlying both sensitivity and intelligence, is maintained. Besides, this part of 'soul' is *common* to all living things." (Italics are the author's. For all passages of the *In De Anima*, we use the translation of Foster and Humphries [New Haven, 1951].) For a like reason he says the generative power is the most natural: "All activities found to be natural to all living things spring, as we have seen, from the vegetative principle as the *fundamental* condition of there being any life at all: and reproduction being one such activity it must spring from the vegetative principle. Indeed he (i.e., Aristotle) relates reproduction to this principle because it is, as he says, the activity *most natural* to all living things: and this because in a certain way the process of generation is *common* to all things, even to inanimate things." *Ibid.*, n. 312. (Italics are the author's.) For other instances of things being said to be more natural because more fundamental and more common, cf. *In VIII Ethic.*, 12, nn. 1720-1725;

shows us that there is an order in applying that term to things. Nature implies *determination to one*, and some natural beings are more determined in their operations than others. Therefore, some mobile beings must be said to be more natural than others, and nature will be said most strictly of the principle of that movement which is *common and fundamental* to all mobile beings. But as regards our intention in this paper, and that of Aristotle's in the second book of the *Physics*, every being composed of matter and form and every operation originating in these two principles, will be called natural. This includes all the operations of man except those of his intellect and will, since these are not motions in the strict sense.

I. Is Knowledge of the Essence of Final Causality?

The problem we are taking up is not recent. Aristotle both recognized it and proposed an explanation. His solution is a simple denial that deliberative knowledge is necessary in order that a natural agent may act for an end.

> It is absurd to suppose that purpose is not present because we do not observe the agent deliberating. Art does not deliberate. If the shipbuilding art were in the wood, it would produce the same results by nature. If, therefore, purpose is present in art, it is present also in nature.[6]

A full understanding of this reply requires an insight into the Aristotelian notion of final causality, and its peculiar application to nature.

A. *Final Causality, Metaphorical Motion*

Our notion of end or good depends on an understanding of

Summa Theol., II-II, 26, 8. See also Cajetan, *Commentaria in De Anima Aristotelis*, ed. Coquelle (Rome, 1939) nn. 140-149.

[6] II *Phys.*, 8, 199b26-30. Unless otherwise indicated, we cite Aristotle from the translations found in *The Basic Works of Aristotle*, ed. McKeon (New York, 1941).

two things. First, we must note the identity of end and good. The causality of the end is the causality of the good. We speak here of the transcendental good, which is the intrinsic and entitative perfection of a thing by reason of which it is perfective of some appetite.[7] Through its property of perfecting some appetite it is desirable and therefore a final cause. An agent is drawn toward some thing as to an end because it sees it as some good for itself, as some perfective perfection. For this reoson Aristotle defines the good as *that at which all things aim.*[8] Secondly, among the four species of causes it is the end that holds the pre-eminent position, since it moves the other causes to exercise their proper causality.[9] It is because of his desire for some end that the agent is moved to operate, to induce form into matter. And since it is this definite end that is desired, a certain kind of matter is necessary to attain it, and thus matter is able to cause. Lastly, either the form and the end are identical or form is utilized for the sake of the end. This brings out the dual character of the final cause. It is first in the order of intention and last in the order of execution. It is the intention of the end that sets the other causes in motion, as a result of which the end comes into physical being.

The particular aspect of the end as the result of the action

[7] "Since the essence of good consists in this that something perfects another as an end, whatever is found to have the character of an end also has that of Good." *De Ver., XXI,* 2 (all translations of the *Quaestio Disputata de Veritate* are taken from the R. W. Schmidt translation [Chicago, 1954]). See Charles Hollencamp, "Causa Causarum," in *Laval Théologique et Philosopique,* IV (1948). The author shows well to what extreme errors Durandus, Suarez and Vasquez were led as a consequence of their failure to grasp the notion of the identity of end and good. Cf. *De Ver.,* I, 1; and XXI, 1.

[8] *Eth.,* 1, 1094a3. For this reason also Aristotle reproaches the poet for identifying term with end: "That is why the poet was carried away into making an absurd statement when he said 'he has the end for the sake of which he was born.' For not every state that is last claims to be an end but only that which is best." *II Phys.,* 2, 194a30-33.

[9] Cf. *In II Phys.,* 5, n. 11; *In Meta.,* V, 2, n. 775; and 3, nn. 781-782; *De Pot.,* V, 1.

does not invite our attention here, for the reason given in our introduction. The recurring good results achieved by natural activities are *prima facie* evidence that nature is a purposive agent. Our difficulty lies rather in showing how the good result directs the process from which it issues. Our interest then is in the aspect of the end as the cause initiating the action. How does the end cause? Precisely what is final causality?

It may strike us as paradoxical that in explaining how the end *moves* the agent, we must first deny that final causality is any motion at all, except metaphorically speaking. Because the efficient cause is most familiar to us, and its causality consists in action, we are prone to identify causality with action. This tendency is made use of to explain the notion of "causality from the end," which we say is something-like-a-motion, a metaphorical motion.[10] In truth, there is no motion involved; the end causes simply by attracting the agent to love and desire it. And the end influences the agent to desire it by, as it were, "breathing" its goodness upon it without any real action being entailed.[11]

But to deny the final cause any real action is not to deny it

[10] "The active power is a 'cause' in the sense of that from which the process originates: but the end, for the sake of which it takes place, is not 'active' (that is why health, is not 'active' except metaphorically.)" *De Gen. et Cor.*, I, 7, 324b14. Cf. J. S. T., *Curs. Phil.*, II, pp. 276-277.

[11] The subtle nature of final causality presents terminological difficulties. It is not a true motion, yet it causes real motion, so we say it is a metaphorical motion. But it is very hard to find the exact terms to describe the causality of the end more precisely. St. Thomas (he expressly mentions it: cf. *Summa Theol.*, I, 37, 1) and the schoolmen felt this difficulty and at times had recourse to metaphors, such as the verbs *to weigh* (*pondere*), *to breathe* (*spirare*). This is shown also by the number of nouns they employed, some of the more common being: *love* (*amor*), *inclination, impression, immutation, proportion, weight* (*pondus*), *adaptness* (*coaptatio*). These terms are not in every way synonomous; some, like *immutation,* are used with exclusive reference to the intellectual appetite. However, we will employ them interchangeably since we are interested in their similarity rather than their unlikeness. Cf. *Summa Theol.*, I-II, 26-28; *Sum. cont. Gent.*, IV, 19; J. S. T., *Curs. Theol.*, ed. Vives (Paris, 1884) IV, Disp. XII, 7, nn. 1-14.

any real causality. The end has a real influence (and is therefore a real cause)[12] on the agent, for it determines the agent to operate.

> An agent does not move except out of intention for an end. For if the agent were not determined to some particular effect, it would not do one thing rather than another; consequently, in order that it produce a determined effect, it must of necessity be determined to some certain one.[13]

Further, the agent is determined to produce that definite effect only because that effect has the nature of a good. "That to which an agent definitely tends must be suited to it: for it would not tend to the thing except for some suitability to itself. But what is suitable to a thing is good for it."[14]

In sum, the whole causal influence of the end consists in overcoming the agent's "indifference to act" by coaxing it to act for a definite goal. This the end does in virtue of its goodness which attracts and incites the agent to desire it. For, "the end is the good desired and loved by each one."[15] Plainly, then, the final cause can be said to be actually causing only when it is actually being desired. "The influence of an efficient cause is to act; that of a final cause is to be sought or desired."[16]

B. *Role of Mind*

This first analysis of final causality, while sketchy, makes it nonetheless clear that the end exerts its influence directly on that power of the agent whose proper function it is to love and strive for things befitting the agent as a whole. This power

[12] ". . . Causa importat influxum quemdam ad esse causati." *In V. Meta.*, 1, n. 751. "Those things are called causes from which things depend either for existence or for becoming." *In I Phys.*, 1, n. 5.

[13] *Summa Theol.*, I-II, 1, 2. For all passages of the *Summa Theologica*, we use the English Dominican translation (N. Y. 1947).

[14] *Sum. cont. Gent.*, III, 3, trans. Rickaby (Westminster, Md., 1950).

[15] *Summa Theol.*, I-II, 28, 6.

[16] *De. Ver.*, XXII, 2.

we call the "appetite," and in men "intellectual appetite" or "will."[17] No mention was made of the mind, and for the reason that the work of the mind is to know things and manifest them. This means that the desirableness of the end, which is the basis of its causal influence, is not brought about in any way by the mind. Reason supposes that desirableness and simply makes it known. Consequently, though an intellectual presentation of the good is a necessary condition of final causality, since nothing can be desired unless it is first known, it is nevertheless not of its essence. Therefore, if we can show that the contribution the mind makes can be supplied by something else, the fact that natural agents lack intelligence will not in itself do away with final causality in their actions.

What reason does is to manifest the goodness of the end-to-be.[18] No agent acts for anything in general but always to achieve a particular result. Yet there must be something that determines it to act for this thing and for no other. That something is the goodness which this thing will bestow on the agent, and which "weighs" in the appetite inducing it to desire and to take up the proper means to obtain the particular good. But only the mind knows the universal nature of goodness in comparison with which particular goods can be evaluated. Only it can judge of the suitability of the tentative end for the agent, and of the relation between the end and the means to secure it.[19] Knowledge of this sort requires comparison and

[17] It is well to remark that when treating of the will and of its act of *love*, we are doing so for the sake of showing that there is appetite, and so, finality in nature. We are thus making use of something we know well, namely, our own actions for an end, to help us to understand something obscure, the purposive activity of natural agents. We must be on our guard, however, to keep well apart the two levels of appetite, the intellectual and the natural.

[18] Cf. Cajetan, *Comment. In Summa Theol.*, I-II, 1, 1, VIII-XI; J. S. T., *Curs. Phil.*, II, pp. 270a-276a.

[19] "Dicendum quod omne quod consequitur aliquem finem, oportet quod fuerit determinatum aliquo modo ad finem illum; alias non magis in hunc finem quam in alium perveniret. Illa autem determinatio oportet quod

reflection, and this only an immaterial knowing power can do. Reason pronounces judgment on the good and presents it to the will with the result that, if the object is suitably attractive, it will seduce the will into loving it; if it is not so attractive the will will reject it. The role of mind in final causality then is to bring to light the *fittingness* of the object for the agent.[20]

C. *Its Function Supplied by Nature*

Now in irrational beings this particular function of reason is obviated (in the sense that it is supplied) by their very nature. St. Thomas brings this out very pointedly in commenting on Aristotle's reply to the objection we are considering. It is there that the Angelic Doctor gives a second definition of nature complementary to, indeed the precise reason of, the one already presented.

> . . . Nature seems to differ from art only because nature is an intrinsic principle and art is an extrinsic principle. If the art making the ship were intrinsic to the wood, the ship would be made by nature in the same way that it comes to be by art. This is most evident in the art which is in that which is moved, although accidentally, as the doctor who heals himself because nature is most like this art. ***Thus it is evident that nature is nothing else than the reason of a certain art, namely the divine, placed in things by which the things themselves are moved to a determined end,*** just as if the artist who makes the ship could give the wood the power of moving itself to produce the form of the ship.[21]

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proveniat ex intentione finis. . . . Intendere autem finem impossibile est, nisi cognoscatur finis sub ratione finis, et proportio eorum quae sunt ad finem in finem ipsum." *In III Sent.*, d. 27, 1, 2.; cf. *Summa Theol.*, I-II, 1, 2.

[20] "But if the motion of will is considered in relation to the object determining the act of the will to this or that object, the object that moves the will is a good apprehended as suitable to that particular individual. Hence, if some good is apprehended, but not as suitable for the individual, it will not move the will." *De Malo*, XXI, 1. For all passages from this article of the *Quaestio Disputata de Malo*, we use the translation of H. Reith, in *Philosophical Psychology* (Englewood Cliffs, N. J., 1956).

[21] *In II Phys.*, 14, n. 8. (I have italicized that portion which is regarded as a second definition of nature.) "Et ipsa natura uniuscuiusque est quae-

In our introductory notations on the meaning of nature, we observed that nature is said both of the active principle, which is form and of the passive principle, which is matter. Consequently, we must also say that the passive principle, as well as the active principle, is an *impression*, a determination from the Divine Intelligence in virtue of which each principle is intrinsically and positively ordered to a definite end.[22] By their nature irrational agents are inclined to one end rather than to another, pursue one object instead of another. They do not know why the particular end to which they are inclined and for which they act is good for them; they simply tend toward it out of an innate impulse. It is the Author of their nature who determines what is good for them, and gives them, as part of their being, a tendency for a particular end.

We have somewhat of a parallel to this in the education of children, which is essentially a process of acquiring habits. Before a child is able to understand the reasons for things, his parents simply tell him what to do, inducing him to repeat the action until it becomes habitual. Only the parents know the reason for the action, the good it will confer upon their child. The habit once acquired, the child pursues good instinctively in virtue of the mind of his parents. It is not without reason that we refer to habit as a second nature.

dam inclinato indita ei primo movente, ordinans ipsam in debitum finem. Et ex hoc patet, quod res naturales agunt propter finem, licet finem non cognoscant, quia a primo intelligente assequuntur inclinationem in finem." *In XI Meta.*, 12, n. 2634.

[22] "It must be known that everything that desires something either knows this and orders itself to it, or it tends towards it from an ordination and direction of something that knows, as the arrow tends to a determined target by the direction and ordination of the archer. Thus the natural appetite is nothing other than the ordination of things towards their ends according to their proper nature. Moreover, it is not only true that things in act are ordered to their ends by an active power, but also matter, according as it is in potency, because form is the end of matter. Thus, to say that matter desires form is nothing else than to say that it is ordered to form as potency to act." *In I Phys.*, 15, n. 10; cf. *Summa Theol.*, I-II, 61, 1; *De Pot.*, IV, 1 ad 2.

These reflections answer the objection that a want of mind prevents activity for an end in nature. Reason's part in final causality is rendered unnecessary in natural operations since nature is a sharing in the Divine Intelligence. The Creator has determined for natural things what is good for them and directs them to that prescribed end by giving them, as their nature, a tendency for it. The natural agent does not need to know the reason why this object is fitting to it, nor the relation between the end and the means. These are necessary when an agent has to determine itself to some one goal in order that it may act. But the natural agent is determined by its nature, in which are the inclination and the proper means to a definite end. Yet it remains true that knowledge of the " ratio " of the end is necessary for final causality, although in the instance of natural operations this knowledge is not in the agent who operates, but in the Artisan of the nature of that agent.

II. Influence of Final Cause on Natural Agent

A. *Analysis of Final Causality*

Another difficulty immediately presents itself. Granted that there is activity for an end in nature; granted that the natural agent does not need intellectual knowledge in order to act purposively, owing to the fact that its nature is a sharing in the Divine Intelligence; still, where is the influence of the final cause in such cases? How does the end exert a real causality on the natural being, drawing that being to itself? That cocktail my host is offering me really attracts my will inciting it to move my arm so that I reach out and accept the drink. Supposing it is a good for fire we are considering; does a high place, for example, draw the fire to itself? If fire tends toward a high place through an innate impulse or determination, it seems that the influence of the final cause, if it is anywhere, should be in the one who gave fire its nature. And indeed, St. Thomas seems to agree with this, since he asserts:

. . . If a thing has no knowledge of the end, even though it has an intrinsic principle of action or movement, nevertheless the principle of acting or being moved for an end is not in that thing, but in something else, by which the principle of its action towards an end is imprinted on it. Wherefore such like things are not said to move themselves, but to be moved by others. But those things which have a knowledge of the end, are said to move themselves because there is in them a principle by which they not only act, but also act for an end.[23]

A satisfying solution to this difficulty requires a further examination of final causality, although we may concede immediately that the causality of the end, as it is found in nature, will not have the full influence it exerts in intellectual agents. Commenting on this passage of St. Thomas, Cajetan keynotes this for us by observing that the principle by which agents act purposively may be of two kinds:

Understand that what acts for an end can have one of two kinds of principles: namely, one of the proper sort; the other of a subordinate nature. That has the proper sort of principle which acts through a power properly its own; while that which acts only through participation in a higher power has a subordinate kind. Now since action for an end evidently entails some comparison of the means with the end itself, it is unthinkable that something be drawn to an end without knowledge, even though it has the ability to accomplish the end. Hence knowledge of necessity belongs to the nature of that principle directive to an end through a power properly its own. Thus the principle directing to an end by a power properly its own belongs to the cognitive order. Consequently, if a noncognitive agent acts for an end, even though it has a principle of action for an end, its principle is only a subordinate kind, namely, that which directs to an end in virtue of being a certain impression from a cognitive being. And in this way natural agents act for an end.[24]

Since the causality of the end lies in the attraction of its goodness, the agent is properly finalized only when it can see the attractiveness of the good, i. e., only when it knows it. But

[23] *Summa Theol.*, I-II, 6, 1.
[24] Cajetan, *In Summa Theol.*, I-II, 6, 1, V.

not any knowledge will do. The attractiveness of the good is its fittingness for the agent, and its suitability with respect to the means. To know the suitability of thing in this way, means knowing it through an intellectual apprehension, because to know it thus entails comparison and reflection. As a consequence, final causality is to be found properly only in intelligent agents whose efficient principle of operation is an intellectual appetite, a will. Inasmuch as natural agents lock intellectual knowledge and depend on their Maker to determine what object is fitting for them, and thus to supply what the mind contributes to telic activity, they must be said to act for an end through a subordinate power, the *impression* they receive from the Creator. *Impression* is a key word in this passage, which the consequent remarks will bring out.

Our next step should be evident. We must go to the root of final causality as found in intellectual agents, and then see if this is had in natural agents. This is but the continued use of our principle of proceeding from what we know best to what is less obvious to us. We know from our own actions what it means to be attracted by some good, to desire it, and to move to secure it. If we wish to know further whether or not irrational beings are drawn by some end in a proportionate way, it is reasonable to find first what is essential to final causality by an analysis of our own purposive actions, and then to see if what we have found is present in natural activity.

Unlike the knowing powers which bring their objects to themselves in a representational way, the will is drawn by its object and tends to an entitative union with it.[25] Now it hap-

[25] "We receive our intellective knowledge from external things: and by our will we tend to something external as an end. Wherefore our act of intelligence is according to a movement from things to the soul: but our act of will is according to a movement from the soul to things. . . . Accordingly both in us and in God there is a certain rotation in the acts of the intellect and will: for the will returns to that whence came the beginning of understanding: but in us the circle ends in that which is external, the external good moving the intellect and the intellect moving

pens that the will is an indifferent and determinable power. Though when it acts, it must always be for some good nevertheless of itself the will is indifferent to any particular good, and must be determined to this good rather than another. And because it is indifferent no limited good can ever coerce the will. The will must freely determine itself. This it does under the coaxing influence of the apprehended good, which seduces, as it were, the will into loving it. But the good as known is in the knowing power, and as such can never draw the will to itself to the exclusion of other possible goods. It must come to be in some manner within the intellectual appetite itself. Since it is obvious that the good cannot be in the will according to its real mode of existence, it must be there by way of a likeness of itself. It is precisely this likeness of the good impressed [26] in the will that determines the will *ad unum*, inclines it to an entitative union with that good and not with another. "The appetible object moves the appetite, introducing itself, as it

the will, and the will by appetite and love tending to the external good." *De Pot.* IX, 9. All translations of the *Quaestio Disputata de Potentia* are taken from the English Dominican edition (Westminster, Md., 1952). Cf. *De Malo*, VI, 1 ad 13; *Summa Theol.*, I-II, 28, 1, and ad 2.

[26] Since the end moves the agent only in a metaphorical, and not in an active sense, we must not understand the word *impress* here as meaning a transient action of the good on the agent. That would make the good an efficient, not a final cause. The causality of the end is simply the passive attraction of the good, which results in an impression of the good residing in the will. To interpret it otherwise would identify us with the position of Suarez who claims only a 'distinction of reason' between the motions of final and efficient causality. (Cf. F. Suarez, S. J., *Disputationes Metaphysicae* [Paris, 1856] Disp. 23, 4, n. 12 and 9, n. 3) and further would make us amenable to the criticism of Hobbes: "These small beginnings of motion, within the body of man, before they appear in walking, speaking, striking, and other visible actions, are commonly called endeavor. This endeavor when it is toward something which causes it, is called appetite, or desire. . . . The Schools find in mere appetite to go, or move, no actual motion at all; but because some motion they must acknowledge, they call it metaphorical motion; which is but an absurd speech, for though words may be called metaphorical, bodies and motions cannot." T. Hobbs, "Leviathan," in *English Philosophers from Bacon to Mill*, ed. E. Burtt (New York, 1939) pp. 148-149.

were, into its intention; while the appetite moves towards the realization of the appetible object, so that the movement ends where it began." [27]

To be actually loved and desired then the good must dwell by way of a likeness in the agent's will as well as in its intellect. Its manner of dwelling, or mode of likeness, differs in each case however.[28] The likeness of the good in the intellect is the kind of likeness a species bears to the individual of the species, and the image, to what is imaged. The likeness of the good in the will, on the other hand, is the sort of likeness that exists between *what* has an aptness for something and *that for which* it is apt, or between *what* is proportioned to something and *that to which* it is proportioned, or again, between *what* is fitting for something and *that which* it befits.[29] The will is a power that is related to its object as to something suitable and apt. It is characteristic of such relations as fittingness, suitability, adaptness, that if one thing is suitable to another, in a certain way the second is suited to the first; and consequently is *like* the first. Therefore if a certain good thing becomes actually loved by the will precisely because it is fitting and apt, then the will itself ought to be co-suited, co-apt (*coaptatio*), hence *like* to it. This shows that the likeness of the good in the will is in fact the will's ad*apt*ation to that thing.[30]

This adaptation can be further characterized as a certain complacency in the good, and as the will's very act of love of it.

[27] *Summa Theol.*, I-II, 26, 2. Cf. J. S. T. *Curs. Theol.*, IV, In Iam, Disp. XII, 7, nn. 1-14, for this entire question of the influence of the final cause on the intellectual appetite.

[28] " Sic igitur quod amatur non solum est in intellectu amantis, sed etiam in voluntate ipsius: aliter tamen et aliter. In intellectu enim est secundum similitudinem suae speciei: in voluntate autem amantis est sicut terminus motus in principio motivo proportionato per convenientiam et proportionem quam habet ad ipsum." *Sum. cont. Gent.*, IV, 19.

[29] This is the type of likeness, for example, that potency has to its proper act, so that in a certain sense we can say an act is in the potency ordered to it. Cf. *De Ver.*, XXII, 1 ad 3; *Summa Theol.*, I-II, 27, 3.

[30] *Summa Theol.*, I-II, 26, 2.

For an agent is said to be *pleased* with the thing that it loves, and it loves not any good but only the good suitable to it. But of necessity the will is ad*apt*ed only to what is suitable. . . . "The appetible object gives the appetite, first, a certain adaptation to itself, which consists in complacency in that object and from this follows movement towards the appetible object." Now "love implies a certain connaturalness or complacency of the lover for the thing beloved." [31]

For this reason St. Thomas says: "Likeness, properly speaking, is the cause of love." [32] By this he does not mean though that the likeness of the end is the cause of the will's love of that end precisely because it is a likeness. It is the cause of love due to its being a particular kind of likeness. We must bear in mind that "our act of intelligence is according to a movement from things to the soul, but our act of will is according to a movement from the soul to things." [33] Hence, "the intellect is made actual by the object understood residing according to its own likeness in the intellect; whereas the will is made actual, not by any similitude of the object willed within it, but by its having a certain inclination to the thing willed." [34] *To act* for the will means *to tend* to an end, so that merely to possess a likeness of the end is not sufficient to have a will-act. Because the likeness of the end that the will has is an adaptation of itself to the good, the likeness is said to be the cause of love. For the very *adapting* of the will to the end connotes a *beginning* of movement towards it. The likeness of the end impressed in the will has a *dynamic* character to it. It is a likeness that is essentially a beginning of movement, a principle of inclination. *Tendential likeness* may perhaps best describe it.

The good inclines the will to itself then by impressing on it a tendential likeness; therein lies the causality of the end. The

[31] *Summa Theol.*, I-II, 27, 1.
[32] *Op. cit.*, 27, 3.
[33] *De Pot.*, IX, 9.
[34] *Summa Theol.*, I, 27, 4.

final cause through its attractiveness as a fitting object alone, and not by any transitive movement, brings about a modification in the will which modification is really a tendential likeness of the good. By virtue of this likeness the will is inclined to the end, and loves it.

> . . . The appetible object moves the appetite, introducing itself, as it were, into its intention; while the appetite, moves towards the realization of the appetible object, so that the movement ends where it began. Accordingly, the first change wrought in the appetite by the appetible object is called love, and is nothing else but complacency in that object; and from this complacency results a movement towards that same object. . . . Since, therefore, love consists in a change wrought in the appetite by the appetible object, it is evident that love is a passion.[35]

At the same time, however, this tendential likeness is a special act of the will, freely elicited by it. Previous to becoming adapted, and thus being inclined to one, the will is simply in potency and undetermined with respect to many objects. To pass from indetermination to determination, is to pass from mere power to act to actual operation. But as this operation is in the order of efficient activity, the will must be determined by an efficient principle. This cannot be the apprehended good, because the good as known is in the order of extrinsic formal cause. It is, in fact, the will itself, which is master of its acts and the first principle in the order of efficient cause.[36] This means that the will itself is responsible for its own determination; that is, the adapting of the will, the tenden-

[35] *Summa Theol.*, I-II, 26, 2.

[36] "If we consider the motion of the powers of the soul from the viewpoint of the object specifying the act, the first principle of motion comes from the intellect. In this way, the good that is understood moves the will. If we consider the motion of the powers of the soul from the viewpoint of the exercise of the act, the first principle of motion comes from the will." *De Malo*, VI, 1; cf. Cajetan, *Comment. In Summa Theol.*, I-II, 9, 1. When it is said that the will is first efficient principle, it is understood that it is so in the line of secondary causality. God is the ***absolutely*** first efficient cause.

tial likening of itself, to a particular object is an act proceeding from the will as freely elicited by it. In other words, it is the very *love* of the will for the good object or end.

In sum, the end causes the will to elicit an act of love of it, not as the end exists in the apprehension, but as it is within the volitional power itself. And, as we said, the indwelling of the end in the will is by way of a certain tendential likeness through which it inclines that appetite to itself. Yet, that likeness is actually a production of the will; it is an act of love which proceeds from, and is freely elicited by, the will. In other words, the will's act of love for a particular good is at one and the same time the cause influencing the will to produce it, and that which is produced. What is one in being, has a double formality arising from a twofold dependence. As proceeding from the will, it is an action dependent upon the will as any act depends on the agent. At the same time it depends upon the object, which 'weighs' in the will, impresses its likeness, thereby inclining the will to itself, and as such, is a passion received in the will. Put another way, the one existential act of love has an active and a passive formality. Considered passively, it is the attractiveness of the good impressing on the will an inclination to itself. Regarded actively, it is an action elicited by the will making itself akin to the object under the enticing influence of that object. Passively, love is the causal influence of the end—what we call final causality; actively, love is the effect of that final cause. And, although final causality and its first effect are identified in the one act of love, nevertheless since they are formally distinct, love as formally passive enjoys a priority of causality, and in that measure precedes love as formally active.[37]

One last precision may be made before considering this same problem with special reference to natural agents. The act of love, or tendential likeness of the object in the will, which, as

[37] Cf. J. S. T., *Curs. Phil.*, II, pp. 280-283.

passively derived from the desirable object is final causality, does not cease to exert its causal influence once it is elicited. It continues to attract the intellectual appetite until the will is joined with the object in its physical being. The kinship, the adaptness of the will to the good, which is elicited by the will as passively dependent upon that good, is, as we now know, really the good as it exists within the will itself. As long as it thus exists in the will, it continues to incline that appetitive power to itself, or, in other words, it will continue to exercise its causality as a final cause. "The beloved is in the will as inclining and in a certain way intrinsically impelling the lover to the beloved." [38]

B. *Applied to Natural Operations*

1. In General—Nature defined in terms of finality

When we consider in what manner the causality from the end obtains in natural agents, it is readily agreed that since natural beings share unequally in nature, if they are influenced at all by a final cause, they will be so in varying degrees. Nevertheless, some general observations can be made first.

Final causality as found in intelligent agents consists in a tendential likening, an adapting of the appetite to a particular good, an impression "breathed" on the appetite by the apprehended good. Moreover, the tendential likeness in virtue of which the will is determined to one good, is actually produced

[38] "Amatum in voluntate existit ut inclinans et quodammodo impellens intrinsecus amantem in ipsam rem amatem."—*Sum. cont. Gent.*, IV, 19. "Et cum dicitur quod iste impulsus, seu impressio, aut pondus voluntatis non est principum et vis impellens, sed terminus, respondetur quod ille impulsus est terminus actionis voluntatis ut spiritivae et ut vitaliter se inclinantis in objectum, sed iterum est ratio et vis ponderans ut continuetur amor, vel iterum eliciatur, aut ut crescat, prout efficacius aut tenacius inhaeserit voluntati ista impressio de objecto cognito, sicut impellens sagittam, aut lapidem prius motu suo tangit lapidem, imprimens illi impulsum, et ex tali impulsu continuatur motus lapidis, et elicitur usque ad locum destinatum." J. S. T. *Curs. Theol.*, IV, Disp. XII, 7, n. 11.

by the will itself, and is in fact its love of the determined end. The will must produce this act, otherwise it would remain indeterminate, and never act. Natural agents, on the other hand, are determined by their very nature to a particular end. Given in their nature itself is an inclination to a good that is fitting for them. They do not have to make themselves akin to a fitting object by a determinating act; they are already so by reason of their nature, which is an impression, a tendential likeness placed in them by the Artisan of nature.

But this likeness to a definite good is what we have discovered to be final causality. In order that the good can exercise its influence as a final cause, it must be in the agent in some way. And it does not suffice that it be there as known; it must be in the appetitive power so that that faculty is adapted to it. Only when thus existing in the appetite does the end cause, and its causality consists in that adaptation or tendential likeness, which may be otherwise called an act of love. "Now every movement toward something or rest in something arises from some kindship or aptness to that thing; and in this does love consist." [39]

Nature is itself then a tendency for a determined suitable good, and in that tendency resides the causality of the end. Thus, matter (nature as a passive principle) is adapted, proportionally like, to the form which is the end of operation. The end is said "to be in" the matter as form in its corresponding potency; it is in it as a final cause drawing the matter to a real union with it.[40] Form (nature as active principle) is that

[39] *Summa Theol.*, I-II, 27, 4; cf. also ad 3.

[40] "Whatever tends to anything tends to it insofar as that thing has some likeness to itself. . . . Now this likeness may be taken in two ways: . . . and (2) insofar as the form of one is in another incompletely, i. e., potentially; and so, by reason of the potential possession of the form of the end and of good, the thing tends to good or its end and desires it. It is in this sense, as having form within it potentially, that matter is said to desire form." *De Ver.*, XXII, 1 ad 3.

whereby matter is adapted to the end of operation, since matter is in potency to form as to an end by the form that now actualizes it. This actualizing form is the very act of inclination to that end, in which act of love is final causality.[41] When we further reflect that "love" is the principle of movement to the thing loved,[42] we realize that nature, since it is the intrinsic principle of motion determined to a definite goal, is defined in terms of finality.

But the adapting of irrational agents to a definite end, which is precisely the causality of the end, does not follow upon an intellectual knowledge in those agents; it is an impression received from the Author of Nature. That is why Cajetan speaks of natural agents acting for an end through a subordinate power, and why St. Thomas often states that such agents are directed to an end.

It must be observed that a thing tends to an end, by its action or movement, in two ways: first, as a thing moving itself to the end, as man; secondly, as a thing moved by another to the end, as an arrow tends to a determinate end through being moved by the archer, who directs his action to the end. Therefore, those things that are possessed of reason, move themselves to an end, because they have dominion over their actions through their free will, which is the faculty of will and reason. But those things that lack reason tend to an end by natural inclination, as being moved by another and not by themselves, since they do not know the nature of an end as such, and consequently cannot ordain anything to an end, but can be ordained to an end only by another.[43]

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[41] "Ex hoc autem oritur inclinatio naturalis, quod res naturalis habet affinitatem et convenientiam secundum formam, quam diximus esse inclinationis principium, cum eo ad quod movetur, sicut grave cum loco inferiori." *Sum. cont. Gent.*, IV, 19.

[42] "Now in each of these appetites (natural, animal and intellectual), the name love is given to the principle of movement towards the end loved. In the natural appetite the principle of this movement is the appetitive subjects' connaturalness with the thing to which it tends, and may be called a *natural love*." *Summa Theol.*, I-II, 26, 1.

[43] *Summa Theol.*, I-II, 1, 2.

2. Specific Application—Manner in which agents are moved

We may well wonder now whether there is not an opposition between the emphasis on impression or subordinate power, through which natural agents act for ends, and the fact that they are said to be directed to their ends. It could be held that the explanation of St. Thomas just given means that natural beings do not truly act for an end, but are merely directed to fitting goods.[44] Hence, it is well to consider how things are moved or directed to a definite goal. St. Thomas has discussed this at length in the *De Veritate.*

> Among things which are moved or which act in any way, this difference is found. Some have within themselves the principle of their motion or operation; and some have it outside themselves as is the case with those which are moved violently, 'in which the principle is outside and the being subjected to the violence contributes nothing,' as the Philosopher teaches.[45]

> The closer a nature is to God, the more pronounced is the likeness of the divine excellence which is found in it. Now it belongs to the divine excellence to move and incline and direct all things while not being moved, inclined, or directed by any other; hence, the nearer a nature is to God, the less it is inclined by another and the more it is capable of inclining itself.[46]

Among beings that move or act there is a gradation, at one

[44] Suarez appears to have claimed this. Cf. Charles Hollencamp, *op. cit.*

[45] *De Ver.*, XXIV, 1.

[46] *De Ver.*, XXII, 4; cf. also XXIII, 1. In this treatment on the manner in which different beings are moved, we must bear in mind that the word *move* has a different sense when applied to the immaterial operations of intellectual agents and when said of the actions of natural agents. Only material beings are moved in the strict sense of motion as an imperfect act. But motion may also be used in the sense of a perfect act, and it is this latter meaning we intend when we speak of intellectual agents as *moving* and *being moved.* Thus, we may speak of the *motion* of the will or of the intellect. For this reason we can say that God moves Himself, even though He is the *Primum Movens Immobile.* For, He knows Himself and loves Himself and the actions of knowing and willing may be called *motions.* Cf. *Summa Theol.*, I, 18, 3 ad 1.

extreme of which we find something that moves itself absolutely without the slightest degree of being moved by another, and at the other, something which is absolutely moved by another, itself contributing in no wise to the movement. Act or form, which is act, is the active principle of operation, so that the more in act a being is, the more is it a "movens." Potency, or matter, is a passive principle of operation, and it is proper to it to be moved; consequently, the more passivity a being has, the more material it will be and the more its motion will depend on another. The power of a being to move itself then will be in direct proportion to its actuality, and in inverse proportion to its potentiality or materiality. God is pure act, and He is the *Primum Movens*, moving Himself entirely without any dependence on another. An artifact *qua* artifact (or anything subject to violence) has no form or movement properly its own; even its passivity belongs to it *qua* natural thing and not *qua* artifact.[47] Therefore its motion is wholly from another; it is completely directed to a definite term by another.

a) *Created Intelligent Agents*

Between these two extremes we find beings that are composed of potency and act, or of matter and form, and so in some way *they have in themselves the principle of their movement.* All of these will be moved to some degree since they are partly passive. Among these we may distinguish agents whose movement is in their own power in such a fashion that they may determine the direction or the term of their movement. These are intellectual agents as distinguished from irrational beings, whose mastery over their acts does not extend to the selection of their own ends.

[47] A natural effect may follow from an artificial thing; yet the effect results from the art-work not inasmuch as it is artificial, but insofar as it is natural, that is, insofar as it is composed of one or more material substances that have a nature. A machine may explode, but the explosion is caused by the action of the natural elements that make up the machine (steel, gas, etc.) and not by the machine *qua* artificial product. Cf. *Summa Theol.*, II-II, 96, 2 ad 2; *Quodl.*, XII, 9, 2.

An intellectual creature is the master of its acts because of its immateriality. It is so removed from the restrictive potency of matter (although not entirely from the realm of potentiality) that it is able to have within itself in a universal way the forms of things existing outside of it. Form being the principle of action or operation, for every form an agent possesses a consequent inclination and operation is possible. Since intelligible forms in deliberating agents are universal in nature, each including a multiplicity of things under it, any inclination from them must likewise be universal in aspect. It is in this sense that we say the proper object of the intellectual appetite is a universal end or good.

> . . . In man there is an intellectual form and an inclination of the will consequent upon the apprehended form, from which proceeds the external action . . . the intellectual form is universal, so that many individual goals can be included under it. Hence, since actions are always individual (no one of which is equal to the potency of the universal), the inclination of the will, remains indeterminately directed to many different objects.[48]

Unless the intellectual agent determines itself to act, to move in pursuit of some end, it will rest indeterminate with regard to many particular goods. Such an agent determines itself by judging the particular goods, weighing their fittingness to itself. If it judges one to be of special value it will incline itself to it by an act of love, while remaining dependent on the object's attractiveness.

Yet, the judgment on the suitability of the particular good is also indeterminate. "The will moves itself through its counsel, and counsel is a kind of search which is not a demonstration, but a search with a way open to opposites." [49] If it were not

[48] *De Malo*, VI, 1.

[49] *Ibid.* We are speaking now of *created intellectual* agents, which means that angels are included. This citation, however, applies strictly to human wills because in them alone do we find *counsel*. Nevertheless, the perfection

indeterminate, neither could the will be indeterminate, because the will determines itself by its judgment. If the judgment would be determined and necessary, the appetite of the will following on the judgment would be determined and necessary, with the result that the intellectual agent would not have dominion over its acts.

The intelligent being succeeds in determining itself by judging its judgment. Because of the immateriality of its knowing power, the intelligent agent can reflect upon its acts and know the relationships that exist among the things of which and by which it judges.

> Now judgment is in the power of the one judging insofar as he can judge about his own judgment; for we can pass judgment upon the things which are in our power. But to judge about one's own judgment belongs only to reason, which reflects upon its own act and knows the relationships of the things about which it judges and of those by which it judges.[50]

The intelligent agent through its intellectual power can know by comparison and reflection the suitability of the end and of the means, and the relation of end to means. This knowledge enables it to judge its judgments and therein lies its freedom, its mastery over its acts. Because it can judge its judgments, it is the cause of its judgment.

> But man, judging about his course of action by the power of reason, can also judge his own decision inasmuch as he knows the meaning of an end and of a means to an end, and the relationship of the one with reference to the other. Thus he is therefore endowed with free choice—that is to say, with a free judgment about acting or not acting.[51]

The degree of actuality that the created intelligent agent possesses raises it above the plane of the material and enables

implied, a *free judgment,* is shared in by angels; we have only to remember that the latter do not make that judgment after deliberation. Cf. *Summa Theol.,* I, 59, 3 ad 1 and 2.

[50] *De Ver.,* XXIV, 2. [51] *Op. cit.,* XXII, 1.

it to remain *indifferens ad multa*, indeterminate in relation to many particular goods. In consequence, not only does it move itself in common with all animated being to the execution of its motion, and like all knowing beings to the acquisition of forms which are the principles of motion, but it also moves itself to its own assigned ends. And owing to this latter privilege, it is the master of its acts. Still the created intelligent agent has some mingling of potency, and to the extent that this is true it must be moved by another. Although it is indifferent to particular ends, it is not indeterminate with respect to its ultimate end, the universal good. The appointment of this end does not come under its power, but is assigned by another; hence it must be moved to it by that other. To this extent the intelligent agent is determined *ad unum*.

Although our intellect moves itself to some things, yet others are supplied by nature, as are first principles, which it cannot doubt; and the last end, which it cannot but will. Hence, although with respect to some things it moves itself, yet with regard to other things it must be moved by another.[52]

Further, in regard to the very exercise of its act of willing, the intelligent agent must be first moved by another. The will is a determinable power that passes from potentially willing to actually willing. Once it wills something in act, it can move itself to willing something else in act; but unless we admit an infinite regress, we have to say that the will has to be moved to its first act of willing by something exterior. In this way also it is said to be directed.

The will moves itself through its counsel, and the counsel is a kind of search which is not a demonstration, but a search with the way open to opposites. Consequently, the will does not move itself of necessity. And since the will does not always choose deliberately to take counsel, it is necessary that it be moved by some cause which makes it will to take

[52] *Summa Theol.*, I, 18, 3.

counsel. Now if you were to say that in this matter it is moved by itself, it is again necessary that a movement of the will precede counsel and that counsel precede the act of the will, and so we would go on *ad infinitum* in our search for the first cause that moves the will. Since this is not possible, we must say in regard to the very first act of the will, the will of any being that is not always in act, that it must be moved by some extrinsic cause. Under the impulse of this thing the will begins to will.[53]

b) *Irrational Agents*

Irrational agents have so much potentiality that they are immersed in matter, although in varying degrees. Man, the lowest in the scale of intelligent beings, rises above the plane of materiality, but not completely, for he is extrinsically dependent upon material phantasms for his intellectual operations. He represents as it were, a limit which irrational beings approach in their varying actuality. The greater the actuality of the irrational agent, the higher the form that it has, the less will it be subject to the restrictive determinations of matter, and the closer will it approach immateriality. For this reason we can speak of some nonintellectual agents as being more immaterial than others.[54] To the degree that they are immaterial, their movements will be imputed to their dominion. Conversely, they will be moved, directed by another to the extent that they are material.

1) *Irrational Animals.* Brute animals, which are next to men in the hierachy of being and highest in the scale of irrational agents, are far enough removed from the complete determination of matter to be able to receive into themselves the forms of other things. Accordingly, a plurality of inclinations and motions toward definite ends is possible to them, so that we can say that in a real sense they are *ad multa.* Having

[53] *De Malo*, VI, 1. Cf. *Summa Theol.*, I, 63, 5, where it is explained that angels are also moved to their first act of willing; see also Cajetan's *commentary.*

[54] *De Ver.*, XXIII, 1.

apprehended through his senses some particular good, say, a bone, a dog instinctively desires that good and moves himself to secure it. "Other things (*viz.* brute animals) have self-movement in a higher degree, that is, not only with regard to executing the movement, but even as regards the form, the principle of movement, which form they acquire of themselves." [55]

Unlike the intelligible forms of rational agents, however, which are universal and immaterial, the apprehended forms of brute animals are singular and material. Hence, an inclination to one thing only can follow upon each form.

> For the form apprehended by the sense is individual, just like the form of a natural object. Therefore, the inclination of the animal like that of natural bodies is towards one determinate goal. But it is not always the same form that is received in the sense, as it is in natural things. For example, fire is always hot, but in one case it is perceived in one way, and at another time differently, namely at one time a pleasant form, and at another time as an unpleasant one. The result is that the animal sometimes pursues the object, and at other times flees from it.[58]

This inclination to, or love for, the particular good differs from that of intelligent agents in that the act of love by which the intellectual appetite is tendentially like to the end is the result of its own free judgment, whereas that of the animal appetite flows from a natural judgment or instinct given it by the Creator. Both these agents receive the forms of things existing outside themselves. But the intellectual agent, since he knows the universal reasons of things, can judge of the fittingness or unfittingness of particular goods for him. He can see the relation of means to end, judge his own judgment and assign to himself certain ends. The animal knows the sensible and singular only, and its material mode of knowledge, inadequate

[55] *Summa Theol.*, I, 18, 3; Cf. J. S. T., *Curs. Theol.*, V., In Iam IIae, Disp. I, 2, nn. 34-36.

[56] *De Malo*, VI, 1.

to the tasks of comparison and reflection, does not allow any judgment on the proportionate likeness between it and the apprehended good. This must be done for it by another, namely the Creator, who places in brute animals a quasi judicative power—a kind of natural prudence by which the animal knows immediately and instinctively whether or not the thing known is a good for it. Acting upon this judgment, the animal elicits an appetitive act either for the thing itself, if it is a good, or for flight away from it, if it is an evil. This particular judgment of the animal is a necessary one, determined in its very nature; and the appetite following it is also determined.

> Brutes have a certain semblance of reason inasmuch as they share in a certain natural prudence, and in this respect a lower nature in some way attains to the property of a higher. This semblance consists in the well-regulated judgment which they have about certain things. But they have this judgment from a natural estimate, not from any deliberation, since they are ignorant of the basis of their judgment. On this account such a judgment does not extend to all things like that of reason, but only to certain determined objects.
>
> . . . But because their judgment is determined to a single course of action, their appetite and activity are consequently determined to a single course.[57]

The intellectual appetite, previous to willing, is indeterminate with respect to many particular goods. It needs a special act of love elicited by itself through which it is made like, and so determined, to one thing. The same is true of the animal appetite.

> The motive power of brutes considered in itself is not any more inclined to one of two opposites than to the other. In this sense they are said to be able to be moved or not. But the judgment by which the motive power is applied to one or the other of the opposites is determined; and so they do not have free choice.[58]

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[57] *De Ver.*, XXIV, 2; cf. J. S. T., *op. cit.*, n. 36.
[58] *De Ver.*, XXIV, 2 ad 2.

Although the animal's appetitive act is necessitated by a natural judgment, still the actual eliciting is from the motive power of the animal itself, by which it moves from potentially desiring this end to actually desiring it. This the animal appetite can do because it was previously in act of desiring something else. So again lest we hold the possibility of an infinite regress, we must acknowledge that the animal in its first appetitive act has to be moved by another from first act to second act.[59]

2) *Plants.* Vegetative beings occupy the next rung in the ladder of irrational agents. Scarcely rising above the absolute determination of matter, they are so remote from immateriality that they are incapable of taking other things into themselves in the immaterial manner of knowledge; they must absorb material things materially by receiving them as nutriment and changing them into their own substance. Both the form by which they act and the end toward which their operations tend are determined by their very nature and to this extent they are moved by their Maker. Only the actual exercise of their operations comes under their power, so that they move themselves to the execution of their motion.

> There are things that move themselves, not in respect of any form or end naturally inherent in them, but only in respect of the executing of the movement; the form by which they act, and the end of the action being alike determined for them by their nature. Of this kind are plants, which move themselves according to their inherent nature, with regard only to executing the movements of growth and decay.[60]

In his commentary on the *De Anima*, St. Thomas points out that plants have a certain *in*determination inasmuch as their proper operations are in some way *ad multa.* "Nature does not move in opposite directions, but growth and decay are in oppo-

[59] Cf. Cajetan, *Comment. In de Anima*, nn. 12-25.
[60] *Summa Theol.*, I, 18, 3; Cf. J. S. T., *op. cit.*, n. 34.

site directions; for all plants grow not only upwards or downwards, but in both directions." [61] Plants are capable of growing in contrary directions, stems ascending, roots descending, branches extending. Also, if an obstacle is placed in the path of its growth, the plant may work itself around, above, or through it. This shows a certain spontaneity in vegetative actions.[62]

In addition, the motor faculty of plants, like that of intellectual agents and animals, may be in a state of mere power to act.[63] Hence they too must be moved to the actual operation of their first act by the Creator.

3) *Inorganic beings.* Finally, we descend to the lowest of irrational agents, inanimate beings. These are so potential that they are completely confined by the conditions of matter. Everything is determined for them by their nature. Like plants, inorganic beings have but the one form of their substantial being and a consequent inclination to one end, but unlike them they have no semblance of spontaneity in achieving that end; they are absolutely determined in their operations.[64]

Inanimate beings cannot even claim the *execution* of their proper operations as their own, since they are in no wise indeterminate with respect to operation. Never do they pass from ability to operate to actual operation; they are always in second act, so that, provided they receive no interference from exterior

[61] *In II De Anima*, 3, n. 257.

[62] In this we can recognize an anticipation of the liberty found in intellectual agents, which anticipation becomes more and more prominent as we rise through the different levels of animal life. In the playful antics of higher animals, such as monkeys and cats, we find this anticipation full blown. Cf. *De Ver.*, XXVI, 2, and ad 3.

[63] Cajetan, *Comment. In de Anima*, nn. 12-35.

[64] "Intellectus enim fit in actu per formam intelligibilem inquantum est intelligens, sicut res naturalis fit actu in esse naturali per propriam formam. Res autem naturalis per formam qua perficitur in sua specie, habet inclinationem in proprias operationes et proprium finem, quem per operationes consequitur: quale enim est unumquodque, talia operatur, et in sibi convenientia tendit." *Sum. cont. Gent.*, IV, 19.

agents, they will always attain their proper end. We may liken their condition to that of intellectual and animate agents in the state of their first actual operation to which they had to be moved by the Creator. But whereas these latter have a certain indetermination, a certain freedom left to them, which they can resolve in virtue of this first movement, inanimate beings are completely determined to one, and have no further act to which they can move themselves. Hence in every way the inorganic being is moved, is directed by another.[65]

This does not imply, however, that the operation or movement of the inanimate being does not properly belong to it, for its movement flows from its very essence. Just as the first act of the intellectual agent is still its own even though it had to be moved to it, so the movement of the inanimate agent is its own.[66]

3) Summary

This perspective of the scale of being serves this purpose: It shows how the "impression" in virtue of which agents are subjected to final causality, and subsequent to which they move to their respective ends, is variously participated in by different natural agents. Since some confusion may have resulted from the ramifications through which our survey has led us, we should clarify matters by means of a summary.

First of all, it is immediately realized that natural agents

[65] "It (the will) can pass or not pass into the act of willing with regard to anything at all. This is not true of natural things, for something heavy always actually goes down unless something else prevents it. This is the case because inanimate things do not move themselves but are moved by other things." *De Ver.*, XXII, 6. "But this (*viz.*, to move oneself) cannot be realized in purely corporeal beings, because their forms cannot be movers, though they can be the principle of motion in the sense of that by which something is moved. . . . This is so . . . because of the baseness and materiality of their forms, which, being far removed from the separated forms to which it belongs to move, do not retain the ability to move but only the function of being principles of motion." *Ibid.*, 3; Cf. also *ibid.*, XXIII, 1.

[66] Cf. *De Ver.*, XXII, 1.

have this " impression " to the extent that they are moved, or insofar as they are natural agents, for the Creator moves them by giving them a determined nature. This is to say, that where their movement ceases to come under their power and springs from a determination *ad unum* placed in their nature by the Divine Artisan, there they begin to act through their " impression." For the " impression " is nothing other than a natural determination in virtue of which the natural agent is made tendentially like and hence inclined, to a particular end or good. It is distinguished from the free determination of intellectual agents, who make themselves tendentially like to an end of their own choice. Thus inanimate beings, since they are in every way moved, are in every way natural and in their very essence they are inclined to some one end.

Although plants have a certain indetermination to their operations and so in some way move themselves, nevertheless in regard to the point under consideration they differ little from inanimate agents. For that reason they may be classed with them, as St. Thomas says.[67]

Animals, approaching closest to the unattainable limit of the free determination in men, can be said to be partly responsible for their own determination or likeness, inasmuch as they move themselves to the apprehension of forms from which follow inclinations to the respective apprehended goods.[68] But the animal appetite is actually moved to elicit those inclinations by a natural judgment. So its likeness to a fitting good is a deter-

[67] " An *insensible nature*, therefore, being by reason of its materiality the farthest removed from God, is inclined to an end, to be sure, but has within it nothing which inclines, but only a principle of inclination." *De Ver.*, XXII, 4.

[68] " Inclinatio appetitus sensitivi partim est ab appetente, inquantum sequitur apprehensionem appetibilis, unde dicit Augustinus quod animalia moventur visis; partim ab objecto, inquantum deest cognitio ordinis in finem, et ideo oportet quod ab alio cognoscente finem, expedientia eis provideantur. Unde ad ea naturali inclinatione moventur. Et propter hoc non omnino habent libertatem, sed participant aliquid libertatis." *In III Sent.* d. 27, 1, 2.

mination of nature, an " impression " received from the Artisan of nature. And just as the intellectual appetite needs a special act freely elicited by itself for every end it seeks, so the animal appetite requires a special " impression " for every good it pursues.

In conclusion, since final causality has been shown to consist in the very likeness, inclination, adaptness of the agent to a good, there can be no doubt that the influence of the final cause comes into play in natural operations. Natural agents act as natural agents precisely when they act through such a likeness, or inclination to a determined end. The end is in the natural agent exerting its causal influence in virtue of that agent's innate aptness for it. This does not imply that intelligence is not required for final causality. It still is. But for natural agents the intellectual knowledge is supplied by the Creator.

Appetitive tendency does not necessarily look to a spiritual existence as does cognition. Hence there can be a natural appetite but not a natural cognition. This still does not prevent appetite from following cognition in animals, because even in the things of nature it follows apprehension or cognition—not that of the things which have the appetite but that of Him who directs them to their end.[69]

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[69] *De Ver.*, XXII, 1 ad 2.