How Sensory Intentionality is Caused (and Related Matters):

Solving Garrigou-Lagrange, Maritain and Simon's Problem of a Special Dependence on God

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I will explain how the sense faculty uses a physical form to produce an immanent act of sensing in which the object has an intentional existence. The explanation will not require a special dependence of sensation on God's action, which even our best teachers proposed.

This will be a study of the ontology of sensation, in the sense of "ontology" which is opposed to epistemology (both ontology in that sense and epistemology are "ontological" in the sense in which the ontological is opposed to the empirical or "empirio-logical"; see Causal Realism). But the ontological explanation of the entitative existence of sense knowledge must be consistent with the epistemological evaluation of the objects that exist there intentionally. So I am taking as known something that I have argued for elsewhere, that sensation makes us aware of the environment's transitive action on the sense organs precisely in its character as causal action.

Transitive action is identical in subject with change. Change exists in the patient, not the agent. As related to the patient, change is identical with passion. Action is change as related to the agent, action as coming from the agent. So sensory awareness of really existing action as action is the same as awareness of action as coming from a really existing agent; it is awareness of action as manifesting, presenting, a really existing agent as a really existing agent. And this awareness of the real existence of the agent is not inferential but direct. For if sensory awareness were not direct awareness of the real existence of an agent as acting on us, it would not be direct awareness of the environment's action on us precisely as action, since awareness of action as action is awareness of change as coming from an agent.

That is a brief statement of the epistemological analysis of sensation that I have worked out in Chapter 10 of Causal Realism, in "The Problem of Thing and Object in Maritain," The Thomist, 1995, p. 41, including n. 26, and in "Wittgenstein as a Gateway to Analytical Thomism" in Analytical Thomism: Traditions in Dialogue, ed. Pugh and Paterson. I will develop that analysis further in Appendix A, which includes a discussion of the brains-in-a-vat problem, in order to make as clear as possible the relation to it of the ontological account of sensation presented here.

I will also take advantage of the present account of sensation to throw some light on the functioning of the illuminating power (a.k.a. the agent intellect) in Sections 6 and 7, on how the intellect knows sensible singulars in Section 7, on the ontological status of sensory qualities in Appendix B, on the development of intellectual knowledge out of sense experience in Appendix C, on the nature of self-consciousness in Appendix D, on the distinction of memory from the imagination in Appendix B and E, and on the ontological status of the sensed object's relation of dependence on the environment in Appendix F. Appendix G offers some further random thoughts on sensation. Appendix H presents other thoughts on sensation that are tentative at best.

1.

Some Aristotelians still refer to the powers living things possess as living by the traditional description "powers of the soul." Those powers, of course, are powers of the whole living thing, plant, animal or human, not just of a "metaphysical" part of the thing, the substantial form. In the case of all living things but plants, however, the soul does have some powers of its own. All vegetative activities have as their direct efficient cause the composite of prime matter and substantial form, the body or some "integral" part of the body, not the form alone. All rational activities, on the other hand, have as their direct efficient cause a power

belonging to the form, a part, and also belonging to the whole as a consequence of belonging to a part.

In the case of sensory activities, we should take seriously the implications of the statement "the soul uses the organs of the body as its instrument." An instrumental efficient cause makes its own contribution to the effect of a higher efficient cause, the principal cause. The implication of sensory activities, unlike rational activities, using the body's organs as their instrument is that the sensory soul has an efficient causality of its own distinct from the causality of the body, which the sensory soul uses as its instrument. An act of the soul alone, not of the composite of matter and form, is the principal cause of sense cognition. Sense faculties are powers of the soul that make use of physical sense organs, integral parts of the composite of matter and form, as instrumental causes.

The sense faculties do not get an "intentional form" from the physical environment or from a special "intentional action" of the physical environment. All physical forms are potentially the sources of intentional existence. For as Aquinas says (ST, I 3, 2 ad 3 and elsewhere), form is not individuated of itself. This is an insight that Aristotelians have not sufficiently taken account of. Just as prime matter has no being of itself and is merely a principle of individuation, form has no individuation of itself. So just as prime matter cannot exist in a state of pure potency but must be actuated by something other than itself, a form but a form capable of being received in matter cannot exist without being individuated by something other than itself. The cash value of this statement is that form is a principle of communication and union between beings just as matter is a principle of incommunication and division between beings. Where matter is a principle of incommunicability; form is a principle of communicability. Where matter is restrictive and limiting, form is expansive.

That is why an efficient cause is able to produce an effect. A form first existing in the agent then exists in the patient. In both the agent and a patient the form is individuated by being received in a passive potency. However, it is not individuated as being a form but as being so received. Therefore as a form through which an agent is active, not just as a form an agent has passively received, shared it can be shared by both the agent and the patient. (Thus states of act constituting what distinct individuals are can be sufficiently similar to belong to the same species insofar as what each individual state of act is caused by its form, not its matter.)

In sensation, the physical environment imposes forms on the sense organs by transitive action; these forms are shared by agent and patient. Note that the kind of act that the environment imposes on the sense organs can be motion. Motion is a state of act that is by essence incomplete relative to some other state of act. When an act is a motion, therefore, it is a form that is essentially incomplete relative to some other form. But to the extent that motion is a state of act it is, like any form, a principle of communication shared between beings. Any change is a communication between beings because a change is identical in subject with an action of the agent and a passion of the patient (see Appendix F).

What I have just said about agents and patients sharing forms applies to entitative existence. How does intentional existence come about in sensation? On the side of the object of sensation, no form is of itself restricted to being a form of a given thing; so it can be a principle by which two things are united or communicate. On the side of the sensing agent, the act of sensation is caused by the substantial form alone, not by the union of form and matter; so an act of the form can make the union intentional, not just physical.

Sensation makes us aware of the physical action of the environment on the sense organs as action. Because the body is a composite of matter and substantial form, action received by the

body is also received by the body's substantial form. So once the environment acts transitively on the sense organs of the body, the sense faculties of the substantial form can perform the immanent act of sensing. In order to sense, the sense faculties do not produce a new specifiying form but get specification from the physical form received from the environment; they use that form to produce an act giving the same form, the action received from the environment, an intentional existence. They produce an act that IS the intentional existence of that action.

For the already present transitive action to acquire an intentional existence, it is enough that the immanent act of sensation be an act of the substantial form alone. Sensation is an act aiming at this object as opposed to that because it is specified by this object, specified by a transitive action that is already entitatively acquired by the sense faculty, a power of the substantial form, since it has been acquired by the union of which the substantial form is a part, the body. But once acquired, the transitive act is able to specify an immanent act that is intentional because the immanent act is performed by the substantial form alone as activated by the transitive act; for in itself, form is a principle of communication between beings. The form imposed by the object is an entitative communication between things; the substantial form of the sensing subject produces an additional union between the things, an intentional union. In sensing, the animal substantial form possesses again what it already possessed through the sense organs, that is, through the body of which it, the substantial form, is a part: the transitive action of the environment.

The sensitive soul has an action of its own, an action not belonging to the union of soul and matter, the body, except indirectly. Because the soul has an act of its own, the form received by the soul from the sensed thing can be the principle of an intentional action. To be the principle of an intentional action it does not have to be a special kind of form. Any form can be

the principle of an intentional action, because no form is individuated, restricted to being the actuation of only this passive subject, on its own, or in itself. Any form can be an "idea" (Simon's term for the form by which sensation is specified) if received by the appropriate receptor. Therefore the right kind of agent can use this form for an intentional action. The right kind of agent is a substantial form that produces actions of its own that are not actions of the composite, except indirectly. Because the substantial form is not in itself a principle of incommunicability, by having an act of its own it can unite intentionally with another thing.

2.

The external agent does not have to exercise two different kinds of acts on the sense organs; it does not have to act both entitatively and intentionally. One of the reasons that the traditional position is not sufficient is that the same alleged double action on the part of the external agent must take place in every physical transaction. But every physical transaction does not result in the intentional existence of an object. The nature of the faculty on which the alleged double action takes place must have something to do with the fact that the result is an intentional existence. In confirmation of this think of a sense organ under anesthesia. The double action is presumably already present in the sense organ. But that double action has not produced an intentional existence because the faculty is not properly disposed. In addition to the action received from the environment, the nature of the faculty has to give it the right kind of ability to take advantage of that alleged double action. So why not just put the capability in the faculty rather than in the alleged second level action, if we can put that capability in the faculty in a way that does not compromise the intuitivity of sensation that comes from sensation's dependence on the action of the environment?

By providing the sense faculty with a specifier, the action of the environment puts the

previously potential sense faculty in act so that it must produce the act of sensing. So there is an efficient causality prior to the efficient causality by which the sense faculty produces its act. That prior efficient causality is the action of the environment imposed on the body's sense organs and therefore on the faculty of sensation, which faculty belongs to the substantial form alone because its act belongs to the substantial form alone. In this way, the efficient causality on the sense organ, the transitive action received by the sense organ, becomes the formal causality by which the sense faculty is actualized and therefore produces its immanent action. Because the body is a composite of matter and substantial form, action received by the body's sense organs is also received by the body's substantial form. Having been put in act by the physical transitive action of the environment, the substantial form produces another act, an intentional immanent act, which is an act of the substantial form alone.

The sensitive soul's use of the form received from the environment as the specifier of the soul's own act also shows the sense in which the soul uses the body's organs as instruments. Physical efficient causality does not just supply the object, as in intellection, but also supplies the form that specifies the power toward the object. In intellection the efficient causality of the body cannot directly provide that specifier. By existing in our body, however, the physical efficient causality of the environment becomes the soul's instrument by being a subordinate efficient causality that makes its own necessary contribution, the specifier, to the act of sensation, the proper effect of the principal efficient cause, the soul. That specifier is, of course, the transitive action itself. The sense faculty could not have the specifier it needs to perform its act unless that specifier were the transitive action itself since the proper object of sensation is really existing action known as such. Making the environment's action itself the specifier is superior to the traditional analysis's making the specifier a distinct form received from the intentional action of

the environment. (On the relation between the received transitive action as a specifier and an efficient cause of sensation, see Appendix A)

That the soul needs the action of the environment to be completely reduced from potency to the act of sensing does not mean that physical efficient causes, whether things in the environment or the sensory organs, are superior to the soul as causes. The lower does not produce the higher. The soul alone contributes the act giving the physical action an intentional existence. Relative to the soul's causing of the entitative act that includes the intentional existence of the physical action, the physical causes are only instrumental causes.

What happens in sensation is what happens in the case of any immanent act that is not always taking place. When an operative potency that is not always performing its act performs its act, the operative potency itself must have been put in act passively by another cause. For example, the illuminating power puts the intellect in act; the intellect puts the will in act. The action of the environment puts the sensory power in act. To produce an immanent act that is not always taking place, the faculty of the act must be moved from potency to act, from potentially being in the state in which it performs the immanent action to actually being in that state. But nothing moves itself from potency to act. So for an immanent act to take place its faculty must first be activated passively by receiving a transitive action. For example, the potentially knowing intellect must receive a form from the illuminating power, so that the intellect now activated can perform the immanent act of knowing. Likewise, an appetite cannot perform an immanent act of desire until a cognitive faculty has presented it with an object, which requires that a cognitive faculty has imposed a form on it. Once cognition imposes a form on a properly disposed appetite, however, an elicited response from the faculty of desire follows immediately. Likewise, once a properly disposed sense organ physically receives transitive action from the environment,

the sense faculty immediately responds with an elicited immanent act of sensing.

The act performed by the sense faculty itself can only exist as long as the transitive action received from the environment exists; it can only exist as long as the environment's activation of the faculty exists. Also, since the exterior sense powers are the lowest cognitive powers, they are not sufficient to produce a specifier distinct from the immanent act of sensing. So the immanent act of sensation does not virtually include a transitive act of producing a specifying form distinct from the act of sensing, such as a concept or idea, as its vehicle. The processes begun by the environment's activation of our sense powers, however, include our interior production of specifiers for imagination and memory (see Section 5 and Appendix B).

When a sensation exists, an entitative state, an accidental intrinsic formal cause, of a sense organ is a means through which the awareness of the object takes place, but this state cannot be just any form previously received and now existing in the organ. That form must be a currently received action. Action has a relation to another, a relation to another essential to its very existence as an action; for a change's relation of dependence on its efficient cause is what makes the change an action. A form other than an action may have the kind of relation to another that ceases to exist when the term of the relation ceases to exist. For example, my extension may have a relation of double the size of something else's extension, but that relation can cease to exist when the other extension ceases to exist or changes without my size changing. But action is related to another such that if the other ceases to exist, the action ceases to exist. So the means through which sensory awareness takes place is a state of action, and this state is a means to awareness of the existence of something other than the action to which the action is related; for to be aware of really existing action as such is to be aware of it as coming from its agent and so to be aware of the existence of the agent.

The soul produces another entitatively existing action, the act of sensation. But that action is also the intentional existence of an object, and that object is a prior entitative action as dependent, not directly on the soul, but on the environment's acting on the composite of form and matter. So in sensation, the prior action's dependence on an external agent now exists intentionally. The intentional existence of that dependence results from us; the entitative existence of that dependence results from the environment.

I place my anesthetized hand close to a source of heat. Because of the anesthesia I do not feel the heat, although the temperature of my hand is raised. Now the anesthesia wears off. The heat in the hand that already existed there physically now also exists there intentionally. We go from relating to something as a passion to relating to it as an object. At the same time that we relate to it as an object we relate to it as an action coming from another. The sensory object is action known as action, action objectified as, or cognized as, action. To be aware of action as action is ipso facto to be noninferentially aware of the existence of the environment acting on us; for to be aware of action as action is to be aware of existing action as here and now coming from an agent that, as being the source of the action whose existence is known, is ipso facto also known to exist.

Another reason for the inadequacy of the traditional view is that the intentional action of the object on the sense would not be enough to make sensation intuitive. The intellect receives forms intentionally by the action of the illuminating power. But the forms received from the illuminating power do not objectify the agent of the form; they objectify something else. The senses are intuitive because the form received objectifies the agent of the form. And that is because the form by which the senses know, the action they receive from the environment, is their object itself, action received from an agent objectified as action from an agent.

3.

The soul that performs the act of sensing is the animal substantial form. That soul is put in act so that it can produce the immanent act of sensing by the physical action received in it only because the physical action is received in the body of which the soul is a part. The soul does not receive the specifying form directly, as the intellect does, but indirectly by being a part of the whole, the body, that does receive the form directly. The object of the immanent act of sensing is the same physical action received in our sense organs from the causality of bodies in the environment. So the new element provided by the substantial form alone, that is, the immanent action of sensing, exists in the context of a causal system, and only exists because of its place in a causal system, that is through and through physical, through and through dependent on composites of matter and form. Because the new element is an act of the form alone, we might tend to view that new element in abstraction from the other elements, the acting bodies and the acted on body. But if we do so we are distorting the reality we're trying to understand.

With the thoroughly physical causal context surrounding of the animal soul's production of the act of sensing in mind, let us ask the following question: Does the claim that the animal substantial form performs an action of its own, an action belonging to the form not to the composite, imply that an animal substantial form is subsistent? No, because the power that performs the immanent act of sensing is a power put in act by the physical action of the environment, and the only reason that the sensory environment can act on the form to which this power belongs is that it is a form united with prime matter to constitute a body on which the environment acts. So the fact that this form can produce its own act under the physical influence of the environment gives no reason whatsoever for considering this substantial form a subsistent substantial form. On the contrary, this analysis points to its not being subsistent insofar as it is a

substantial form that produces acts of sensation rather than intellection. Although sensation is an act of a substantial form alone, not of the body composed of matter and form, it cannot take place except through the actualization of the substantial form by means of the physical actualization of the whole, the body, of which that form is the part. So the animal substantial form could perform no act in a state in which it, the substantial form, was separated from matter. So it could not exist in separation from matter.

Pedagogically, it may be helpful to look at this way. If we had discovered the fact that sensation was an act of the animal soul alone before we discovered that intellection was an act of the rational soul alone, we would not be tempted to even ask whether this discovery argues for the subsistence of the animal soul, nor to ask whether the animal soul was "immaterial" in the sense in which the rational soul is. As Wittgenstein said, "don't think, look." Look at the situation I just described: the situation of a power capable of being put in act by the physical environment only because the agent to which the power belongs has no existence other than being the formal part of a body. That kind of substantial form does not and cannot become subsistent by the fact that it has some action of its own. If that is the only kind of immanent act this substantial form were capable of, this substantial form quite obviously would not be subsistent. There is nothing in such a substantial form that can act independently of the form's dependence on matter, independently of the form's relation of inhering in matter. Rather, the action of that form is entirely dependent on the form's ability to receive physical action precisely because it is the formal part of a body.

If giving the animal soul an act of its own does not require making the animal soul subsistent, perhaps it has an opposite problem. If a substantial form can have an act of its own without being subsistent, is the argument for the subsistence of the rational soul jeopardized?

No, the subsistent immateriality of the rational soul is proven by the fact that the soul can relate to universal objective concepts in abstraction from using them to identify sensible individuals as falling under a universal. A parrot can do the latter when, for instance, it learns to answer questions about individuals like “What matter is this?” and “What shape is this?” using words like “wood” or “rock” and “square” or “round,” respectively. But a parrot gives no evidence of being able to relate to universals in abstraction from being values found in this or that individual as we do when we ask “What is matter, shape, wood, rock, square, round, etc.” In other words, parrots do not relate to matter, etc. as objects in their own right (essences), as themes. Since matter is the principle of individuation matter must not enter into the causing, efficient or formal, of an activity that relates to universal objective concepts otherwise than as what this or that individual is. None of this applies to the animal soul even given the fact that the animal soul has an activity of its own of the kind I have described.

The reason that a material substantial form such as an animal's soul is able to be the agent of an intentional act is, as was said above, that form is not individuated of itself. Therefore form is not a principle of incommunicability of itself. It is a principle of communicability, of shared reality, of communication between things. That is also a necessary condition for the rational soul’s ability to do what it does, but not a sufficient condition. The rational soul depends upon the body only for the presentation of an object for the illuminating power to make intelligible in act; the body does not enter into the efficient causing of any intellectual action. As for the formal causing of intellectual acts, the body only provides necessary preparation for the illuminating power to produce the immaterial impressed specifier that puts the intellect in a sufficient state of act for it to perform the act of understanding. The illuminating power needs the body only to provide the sensed, imagined or remembered object for it, the illuminating power, to change

from potentially to actually intelligible. This does not make the body an "instrument" of the illuminating power in the sense of an instrumental efficient cause. Instrumental efficient causes produce an effect of their own in the receiving patient. The body does not produce any effect on the intellect; it only provides necessary pre-conditions for the efficient cause whose action does produce an effect in the intellect. (Simon argues for a type of instrumental formal causality in the process by which the illuminating power puts the intellect in a state of act. On the relation between the illuminating power and sensory cognition, see Sections 6 and 7.)

4.

Now I will consider whether the immanent act of sensation can itself be considered a form produced by the sense faculty; and if so, could the sense faculty be said to produce a specifier through which the object is made present to the faculty. The answer to the first question is yes, to the second, no. We can call the immanent act of sensing a form, as we can call in a state of act a form. But the causal significance of so calling it is clearly different on the sense level from what it is on all other levels of cognition.

Does the sense power produce anything entitatively new? Yes, it produces the immanent act of sensing. The question is does the immanent act also produce something else. Does the sense power produce anything new other than the immanent act itself; in particular, does it produces an additional intentional form, like an idea or a specifier, through which the immanent act takes place? No. Higher immanent acts, for example, those of the intellect, envelope productive acts of new forms, as Simon explains. The exterior senses are too low for that.

Once external sense cognition has taken place, interior sensory cognitions, like imagination and memory, can take place. Interior sensory cognitions may envelope the production of new forms; such productive activities can be virtually included in the immanent

acts of cognition, and their products, these new forms, are ancillary to the acts of cognition. But there is a huge difference between the function of these new forms produced by the interior senses and the immanent acts produced by the external sense faculties. Once interior acts of cognition have taken place, we are in an habitual state in which we can either recall or recreate the forms through which the object of the interior act is present to the interior act. But the act of sensing does not have the causal function of being that which makes the object present for the sense power to know, which is the causal function of the forms produced by the interior acts. Nor is the immanent act of external sensation act a form that puts us into an habitual state of being able to recall an object the way it was present when that form was produced, which is what we can do in imagination and memory. Only the act of the environment on the sense organs makes the object of the sense faculty present to the faculty. The object of the sense act cannot be made present again by an act of the senses, except through a new action of the object imposed on the sense organs, a new state that is the form through which the immanent act of sensing takes place. So calling the sense act a form does not give it the causal significance relative to sensory cognition that the forms produced by other kinds of cognition have.

There is still some advantage, however, in describing the immanent act produced by the sense faculty as an intentional form. (If we do, we should not call it an expressed intentional form, since an expressed intentional form implies that there was previously an impressed intentional form, and in this case the previous form was not yet an actual intentional form. Intentionality does not actually exist until an act of sensation exists.) The advantage is that we can call the "form," the act of sensing, produced by the senses an impressed specifier relative to the forms produced by acts of imagination and memory, expressed specifiers. So there would be an intentional form prior to the intentional form produced by the act of imagination or memory;

there would be an intentional form that is the source of the content made present by the intentional form produced by the imagination. For all higher acts of cognition seem to produce their specifiers on the basis of a prior intentional forms.

The senses are aware of the environment's action on them as action precisely because the environment does not communicate an intentional form, only a physical form. Therefore the intentional "form," the act of sensing, produced by the senses when they are moved from potency to act, can attain no other object than the object that moves them from potency to act. In the dark, the faculty of sight is all set to produce an intentional act of seeing of color but still needs to be united with a sensible object by a formal cause produced by an efficient cause, but not united with an object by causes that will by themselves produce the intentional union, the faculty of sight is the cause that does that. The faculty of sight needs to be united with an object by physical causes that reduce the intentional power from its remaining potency to a state of act sufficient for producing the intentional union.

In sensation, the terminus of the immanent action, the object of sensation, is physically present or the immanent action would not be taking place. The object, therefore, does not need a tertium quid, such as an expressed specifier, between it and the faculty. The object is the very action by which the faculty is moved to act (objectified as action, that is, as emanating from the agent). Therefore the presence of the object does not require another form, another state of act. In the case of other cognitive powers, the object is not the very physical existence of something. So the physical existence of something cannot account for its presence as an object and an intentional form distinct from both the act and the object is needed.

Why does sensation occur without the production of an expressed specifier? Because the reception of an impressed specifier (and we can call the action of the environment that if we

wish, as long as we know that it is a cause of intentionality only by providing a necessary condition for an intentional act distinct from itself) from the environment actualizes the faculty for an action that does not require the production of anything other than the action. Why does the second action not require the production of anything other than itself? Because the terminus of the action is already physically present or the action couldn't be taking place.

A criticism of my theory: doesn't the form through which consciousness exists have to be a two-sided form as described by Cajetan, a form having an entitative side by which it exists in the knower and an intentional side by which it makes the objects present? Does my theory account for both sides? Yes, the intentionality comes from a substantial form that has an act of its own as a form, as something not individuated because of itself and therefore able to be a principle of communication and union with something else if activated by another principle, the form received from the environment, that likewise is not individuated because of itself. The result is a state, an accidental mode of being, having both modes of existence. That state is the immanent act of sensing. So I am not really contradicting Cajetan on the existence of two kinds of entities, one-sided things and two-sided things, though I may be contradicting him by holding that the form received from the environment is not two-sided.

5.

As actions whose objects are individuals characterized by sensible features, imagining and remembering must be actions of the soul alone that have a dependence on the body not shared by intellectual acts. In addition to expressed specifiers produced by imagining and remembering, or perhaps in place of them, these activities must depend on states of the body. And those states must be themselves be derived from prior acts of sensation and the actions of the environment that provoked them. So perhaps we do not need to say that acts of the interior

senses produce their own specifiers. If acts of the exterior senses can be specified by forms that are states of the body, even though those acts are performed by the substantial form alone, why can't acts of the interior senses? When the necessary interior modifications of the body exist, the soul which is part of the body is therefore also modified, and the soul's faculties of imagination and memory can produce acts that are intentional because they are acts of the soul alone, though using the body as an instrument insofar as the body produces those necessary physical states.

Specification by states of the body would not prevent interior sense acts from being acts of the soul alone if it does not prevent exterior sensation from being an act of the soul alone. But neither would it require that the objects of interior sense acts be actions on the interior sense faculties objectified as actions, the way the objects of the exterior senses are. When the illuminating power provides the potentially knowing intellect with a specifier, the subsequent act of knowledge is not knowledge of the existence of the illuminating power but of something else, the specified nature and that nature objectified as a possible existent. Likewise, when the body provides the imagination or memory with a specifier, the subsequent cognition is not awareness of a state of the body but of some other object, e.g., a red surface, as something capable of, but not actually, acting on the body (see Appendix B).

Once the physical states that specify interior sense acts have been produced on the basis of prior exterior sensation, those states remain in us habitually, ready to specify interior sense acts when whatever other conditions necessary for those acts are present. The physical states that specify exterior sense acts cannot remain in us habitually. If they did, they could specify exterior sense acts when the objects of those acts were not physically existent and present to us. Because interior specifiers remain in us habitually, when they specify acts, the objects of those acts cannot include real existence physically present.

The production of physical interior specifiers on the basis of exterior sensation, might require an act of the soul alone, external sensation, to have an effect, the physical specifier of the interior act, that exists in the composite, the body. But that should not be a problem, since the substantial form determines the characteristics of the body, and the sense act would be a modification of the substantial form. The will is a power belonging to the soul alone that produces a form, the ultimate practical judgment, that exists in a power that belongs to the soul alone, the intellect. But because the soul is the formal cause of the body, the ultimate practical judgment of the intellect is the proximate formal cause directing actions existing in the body and performed by the body as their efficient cause. Likewise, the act of sensation is formal cause, a quality, produced by a power existing in the soul alone. But because the soul is the formal cause of the body, the act of sensation could be the proximate formal disposition directing the body's production of specifiers for the imagination and memory. Just as the action of the environment on the body affects the soul, since the soul is part of the body, the soul's own act of sensation affects the body, since substantial form and prime matter exist only as united with each other to constitute a body.

6.

The fact that sensation is an act of the animal substantial form alone can increase our understanding of how the illuminating power is able to specify the intellect to this or that object. When we sense, imagine or remember something red, there is a potentially intelligible content (a content able to be understood by the intellect) present: redness, what-it-is-to-be-that-color. There should be NO difference between that content itself as an object of a sensory act and as an object of an intellective act, other than the fact that the object of sensation is an individual instance of what it is to be red that has features not shared by other instances, while the object of intellection

is what it is to be red to the extent that what it is to be red is able to be found in other instances. The content what-it-is-to-be-red must be present in both ways. All we need the illuminating power to do is to change the way what it is to be red is present such that the object no longer includes individuating details that make it what-it-is-to-be-this-instance-of red. The fact that the presence of that object as individual is an act of the animal substantial form alone must be important for the illuminating power's function of making that same object present without individuating details.

Sensed (and imagined or remembered) red is in fact an instance of an essence. When sensed, we can describe it as "freed" from matter in a certain definable, but limited sense: when sensed it has an intentional existence as the object of an act performed by the substantial form alone, not by the composite of form and matter. But once it is an object of an act of the form alone, a sufficiently powerful substantial form can free the object from matter in a further way through acts that are independent of matter in a definable higher way. One necessary, though not sufficient, condition for a substantial form to be powerful enough to re-objectify an already sensed essence without the individuating effects of matter would be that the soul is capable of possessing accidental forms directly, not just by being part of a composite that possesses them directly. The locus of acts whose objects are not individuated would have to be the union of a soul, which like all forms is not individuated on its own, with an accidental form that belongs to the soul alone, not to the composite of soul and prime matter.

But the first such accidental form belonging to the soul alone is the act of sensation, whose object is individual because its presence depends on a form received directly by the composite, not by the soul alone. Likewise, acts of imagining and remember have individual objects, yet those acts produced by the soul alone. The animal soul is capable of producing some

forms on its own, but it does not receive forms on its own. A soul that is sufficiently powerful to re-objectify a sensed essence without material individuation must be capable of receiving accidental forms from an efficient cause directly, not just as part of a composite. In order for there to be other accidental forms that can be received directly by the soul, however, the soul alone must be the efficient cause of those forms; for the efficient causality of the body could only produce forms received directly by the composite. So a soul that is sufficiently powerful to perform an immanent act of knowing as a result of receiving an accidental form directly must have the power to perform a transitive act by which such an accidental form is produced. The illuminating power is what performs that transitive act.

Before we have a universal concept of red, the essence what-it-is-to-be-red is already present to our consciousness, but in an individual state. Still, it is present in an immaterial state to the degree that it has an intentional existence in an act produced by the soul alone. How does the rational soul further free that essence from its individual instance? By the illuminating power, the soul alone must produce another new form. But this time the form must transcend the causality of matter not only by being produced by the soul alone, but by being a direct actualization of the soul alone, by being directly received by the soul alone not the composite. As such, the new form can function as a specifier for a further act of the soul alone that will give the same essence that was already present immaterially a new intentional existence even more removed from matter. That subsequent act of cognition will no longer be specified by an essence subject to individuating conditions, as sensory acts are, because the specifier will not be a form received directly by the material composite.

To demystify the work of the illuminating power further we must recognize that the difference between the way red is present as a sensory object and as an intellectual object is

essentially NEGATIVE. Whatever psychological acts may or may not be involved in our grasp of objects abstracted from individuating conditions, the result of those acts, as opposed to the acts themselves, is that cognition has an object that does NOT include certain things. As Poinsot says (if you haven't read Poinsot's treatment of the universal, shame on your teachers [SOYT], or on their teachers), when we are referring to an intellectual object's property of being "abstract," we mean a LOGICAL fact about the object as object, not a psychological fact about an act of objectification as an entitative act of the subject. That logical fact is the NON-INCLUSION of certain features in the object: the non-inclusion of the features that make this red this red in the case of the objective concept of red, the non-inclusion of what makes red this color as opposed to that color in the case of the generic objective concept of color, the non-inclusion of what makes color this quality as opposed to that quality in the case of the generic objective concept of quality, etc. The non-inclusion of what is specific to red in the objective concept of color is a (negative) logical relation between two objective concepts; the non-inclusion of what individuates the sensory object, this red, from the intellectual objective concept, red, is a logical relation between an intellectual object and a sensory object. Whatever positive content is present in the objective concept of red is already POSITIVELY present in the sensory object, this red. That is why the sensory object can be an instrumental cause for the illuminating power, not as an efficient cause but as an extrinsic formal cause, a cause in the order of specification (see Appendix A).

As physical, in the sense of requiring a substance composed of prime matter and substantial form in which to exist, the accidental essence, what-it-is-to-be-red, cannot contribute any further efficient causality to the act by which the illuminating power provides an intellectual impressed species to the intellect. The lower agent does not act on the higher. But neither the

sensory environment nor the external and internal sensory organs needs to provide any further efficient causality. The question is how the individual specifying objects of sense acts make a contribution to the causing in the order of specification of acts whose objects are characterized by universality. Since that material essence already has an existence in an act that belongs to the soul alone, not the composite, a soul with higher powers is enabled to use the prior presence, which belongs to the soul alone, to make the same essence present in a new act that belongs to the soul alone. The prior act of the soul has made the essence present in a way that is accessible to acts of a soul that has the power necessary to perform higher acts that produce specifying forms that are also received by the soul alone. The rational soul can make use of the prior presence of the essence in this way because that prior presence belongs to the soul alone. But the rational soul cannot do so and retain the individuating conditions that belong to the essence as the specifying object of a sensory act; for that mode of specification requires a specifier received directly by the composite not by the form alone. So the specifying objects of intellectual acts must be the same as those of sense acts but NOT including individuating conditions, and neither the material essence nor the illuminating power needs to provide any further POSITIVE specification (the illuminating power provides further efficient causality) for higher cognitive acts.

If the objects of the soul's external and internal sensory acts do not contribute any further efficient or specifying causality for the act of the illuminating power, for the sake of completeness we can ask whether those sensory acts themselves contribute efficient causality to the illuminating power's acts in any way? As with the answer to any philosophical question, everything depends on putting words together in precisely the right way; a miss is as good as a mile. But the bottom line has to be that if sensory acts could be said to contribute efficient

causality to the illuminating power's acts, that causality must differ from the environment's causing of the sense act in the following ways. First, what the environment is an efficient cause of is an act of cognition, an act making something an intentional object. The act of the illuminating power is not an act of cognition. The causality of the illuminating power puts the potentially knowing intellect into the state of act necessary for it, the intellect, to produce an act of cognition. In whatever way a sensory act might cause the illuminating power's act, the sense faculty would not be an efficient cause of an additional act of cognition.

Second, and as a direct consequence of the first point, the environment's efficient causality of an act of external sensation is itself part of the cause of such an act in the order of specification (see Appendix A). But when sensory acts provide the illuminating power's acts with a cause in the order of specification, that cause in the order of specification does not include the sensory acts's being an efficient cause of the illuminating power's acts. What specifies the illuminating intellect's act is not any sensory efficient causality but an essence that was present, in an individual mode, by means of sensory efficient causality (see Section 7 and Appendix C).

In the process that ends in the objective concept of redness, we go from (1) the entitative presence of an individual instance of that object as the manner in which the environment acts physically upon the composite of matter and form (the environment acts on us redly), to (2) the intentional presence of that individual instance as an object of an act performed by the substantial form alone but under the physical stimulation of the environment on the composite, to (3) an intermediate stage with no physical efficient causality that I will discuss in a moment, to (4) the intentional presence of redness without individuating features as an object of an act performed by the substantial form alone, intellectual knowledge. The fact that the second stage is an act of the form alone is crucial for the illuminating power's ability to prepare us for the fourth

stage, which is another way the object will be made present by an act of the form alone.

Because there is already an object made present by an act of the form alone at stage 2, an efficient causality of the form alone different from stage 2, an efficient causality that does not depend on any material efficient causality beyond that at stage 1 (which is required for stage 2) can cause the soul to receive a form of a different kind from the form received in the body from the physical environment. Since no further physical efficient causality is required, the illuminating power can act on the state, stage 2, that is already a state of the soul alone and produce a new state of the soul alone by means of a form that has no further dependence on physical efficient causality. The result is a state, stage 3, the union of the potentially knowing intellect with a specifier impressed on it by the illuminating power, that does not depend on the causality of matter either in the sense of depending on a physical (composite) efficient cause or in the sense that the impressed specifier is an accidental form received directly by the composite, as the specifier of sensation is. The intellect thus put in act is able to produce a state, stage 4, in which what it is to be red is present without the individuating features that require the causality of matter.

Nothing I have said here depends on our "abstracting" essences in the sense of "focusing on" or "giving attention to" certain sensorally experienced features as opposed to others or "prescinding from" some as opposed to others. What we do as children when we come into possession of intellectual objective concepts like something-red, something-hot, something-moving, etc. may or may not include such psychological acts. I have been talking about logical properties, abstraction and universality, of such objective concepts regardless of what psychological acts may be needed for us to acquire objective concepts with those logical properties. (But concerning one extra-logical feature belonging to all our primary concepts, we

must carefully and in a strictly defined way EXCLUDE abstractive psychological acts from our acquisition of the objective concept. See Appendix C.)

7.

If material natures must be made universal when they are known by the intellect, how does the intellect know material individuals? And what about our own nature as capable of sensing, rather than as a material individual capable of being sensed? Our sensory acts both bear on individuals and are themselves individuals. Since the intellect's direct knowledge of the natures of the objects of sensory acts must be knowledge of universals, since those natures must be freed from the cause of their individuating conditions, matter, must the intellect's direct knowledge of the existence and nature of sensory acts themselves know them as universal?

Perhaps it need not be. Individuation per se is not an obstacle to intelligibility, only individuation caused by prime matter. As existing outside the mind and as sensed material natures are intelligible only in potency. That is not the same as being intellect-ed only in potency; as outside the mind and as sensed they are intellig-IBLE in potency. For when the intellect receives their impressed specifier from the illuminating power, they are not yet intellected in act but are now intellig-ible in act, since the illuminating power makes them present in an immaterial state. So they are no longer intelligible only in potency though they are still intellected only in potency. Material natures do not become intellected in act until the intellect, after being actuated by the impressed specifier received from the illuminating power, produces the act of understanding (and its own expressed specifier). On the other hand, an angel's individual essence is intelligible in act by the fact that it is an immaterial essence. But the angel's essence is not intellected in act simply by the fact that it is immaterial. For its essence to be intellected in act, the angel must produce an act of understanding that is an accidental mode

of being distinct from the substance.

Through its knowledge of a universal object, our intellect becomes intelligible in act to itself even though its state of knowing the universal is an individual state. The foundation of the intellect's ability to grasp itself as individual is the fact that the rational soul is subsistently immaterial and so capable of acts that do not depend on the causality of matter. But things are intelligible only to the extent that they are in act, not in potency. Our soul becomes intelligible in act when it performs an act into which the causality of matter does not enter. When the soul is in act with respect to a universal, and hence intellectual, grasp of a sensible nature, it is able to know itself by means of the intellect because its state of knowing is intelligible in act, being immaterial That its state of knowing the universal is an individual act does not prevent the soul from having an intellectual knowledge of the act, and of itself as producing the act, since the act's individuality is not directly dependent on the causality of prime matter.

If my account of sensation is correct, however, when the soul performs a sensory act, it is no longer in potency with respect to an act that belongs to the soul alone, not to the composite of form and prime matter. So by means of sensory acts, why can't the human soul (although not the intellect as such) be intelligible in act just as it becomes intelligible in act through intellectual acts? Again, I do not say it is intellected in act at this stage, only intelligible in act, no longer intelligible only in potency. Our primary intellectual acts grasp physical natures as universals, but those acts are individuals, and we are intellectually aware of them despite the fact that they are individual objects, because they do not depend on the causality of that which makes things intelligible only in potency, matter. Sensory acts do depend on the causality of matter for their specification by their objects. But even in external sensation there is an act of efficient causality that is an act of the soul alone and so could make the soul intelligible in act.

To be intelligible in act is to be sufficiently free of matter to be able to become the specifying object of an act of intellection. That is what the illuminating power accomplishes, prior to the intellect's acts of understanding, for physical natures. But since sensory acts are acts of the soul alone, why can't they make the soul intelligible in act as the illuminating power makes physical natures intelligible in act ? If so, the rational soul, which virtually includes the animal soul, could be directly aware, through an act of the intellect, of the existence of individual sensory acts as individuals AND THEREFORE indirectly aware, through an intellectual act, of the individual objects of those acts. But the soul could not achieve more than a primitive intellectual "understanding" of those objects [really just a direct though not further developed awareness of the existence of something-performing-an-act-of-seeing-a-red-thing, something-remembering-a-moving-thing, etc., where both the sensory agent and its object are known as individuals] without the formation of universal objective concepts and the expressed specifiers needed for grasping natures as universals. The soul would require universal objective concepts to advance beyond its primitive awareness of what sensory acts are; for the soul must understand everything else according to the mode of understanding appropriate for its connatural objects, physical natures.

The illuminating power might be essential to this direct intellectual awareness of the soul's sensory acts as individuals, and so indirect intellectual awareness of the objects of those acts as individuals. (Perhaps it would be better to say that that awareness of the individual object was the same in subject with the awareness of the sensory act than to contrast theses awarenesses as indirect and direct.) The intellect could be put in act for that awareness of sensory acts by the same act of the illuminating power that gives us an impressed specifier for understanding a sensible nature. Intellectual awareness of the existence of sensory acts requires an intellectual

act. Perhaps the potentially knowing intellect could not perform any act until it receives an impressed specifier from the illuminating power. Once it receives such a form, the intellect can produce an act of understanding a sensible nature. In the same act by which it is aware of a sensible nature, the soul is aware of its own existence as performing that act (see Appendix D). Perhaps at the same time the soul first becomes aware, at the intellectual level, of its existence as also performing acts of sensation. The illuminating power's act of raising the sensed nature to the level of intelligibility in act could also enable the subsequent intellectual act to be aware of the sensory act from which the illuminating power derived the impressed species, without any further activity by the illuminating power; for the sensory act was already intelligible in act, since it is an act of the soul alone.

As intelligible in act, the sensory act is "just waiting" to be objectified by an intellectual act, somewhat as the angel's substance is just waiting to be objectified by the angel's act of understanding. Our intellect, unlike the angel's, cannot use the soul, the substantial form, itself as the impressed species through which we produce an intellectual act of knowing ourselves as performers of sensory acts. But the intellect's direct, foreground objectification of the sensible nature based on its reception of the impressed specifier from the illuminating power could be identical in subject with a nascently reflexive, background intellectual awareness of the sensory act. And that intellectual contact with the sensory act would make us aware of the soul as source of sensory powers and acts. So we would be aware of sensory acts and the soul as their producer through the same intellectual act of knowing sensible natures that gives us our first nascently reflexive, background awareness of the intellect's act and of the soul as producer of the intellect and its acts (for a discussion of the soul's self-awareness, see Appendix D).

Thus, the soul's awareness of itself as performing intellectual acts could virtually include

awareness of itself performing sensory acts; for the rational soul that produces the intellect and the intellect's acts virtually includes the animal soul that produces sensory powers and acts. The soul's production of all its powers, rational, animal and vegetative, comes from one source: the soul's exercise, as opposed to mere reception of, the act of existence (see "A Theory of the Incarnation and Subsistence," especially Appendix A, in Theological Contributions and "Properties, Existence, Change," in Contributions to Modern Aristotelian Philosophy, both at www.aristotelian.info). Through the act of understanding a sensible nature, the soul becomes aware of itself as possessing the power, the intellect, by which it causes that act and as the ultimate source of that power. In being aware of itself to the extent that it is the source of the intellect and its act, the soul is made aware of a state, namely, its exercise of existence, that is the same state the soul is aware of when it is aware of itself as the source of sensory powers and acts. For the soul's prior state of act, the exercise of existence, by which it produces all its powers, is the same.

And while the soul's formal awareness of itself as the source of the intellect and its acts differs from its formal awareness of itself as source the sensory powers and their acts, it must also be aware of its existence as the identical source of these differing powers and acts (see Appendix D); for the soul is aware that these differing formal objects present the same material object, the soul as source of all its powers. That awareness of the ultimate unity of the understander and the senser must take place through an act of a power (though not necessarily through an act separate from the soul's non-reflexive acts). That power can only be the intellect, since awareness of what the intellect is is included in that awareness. When we become intellectually aware of the soul as the source of the intellectual powers and its acts, we become aware of the soul as the source of whatever powers it has and their acts, since it is for the same

reason that the soul is source of all its powers and acts. All that a grasp of the unity of the understander and the senser takes, then, is a simultaneous intellectual awareness of the existence of sensory acts as produced by the soul, and therefore, by the same soul.

Or an act of sensing, imagining, or remembering might function as the impressed specifier for the rational soul's awareness of itself as sensing, since as acts of the soul alone, sensory acts make the soul intelligible in act. If so, could the soul then produce an act of understanding itself as a sensory agent without any help from the illuminating power? Perhaps, and we would still have a direct intellectual awareness of an individual sensory act and an indirect intellectual awareness of an individual sensory object. Could we then say that the sensed physical nature is now intelligible in act? It would not yet be intellected in act because we have not objectified it as universal. But as object of this first intellectual awareness, the sensed individual would exist in an immaterial state one level beyond the immaterial state it has when merely sensed.

As sensed it exists immaterially by an act of the soul alone, but that act is causally dependent on matter, dependent in the order of specification for imagined objects, also dependent in the order of (present or past) exercise for sensed and remembered objects (see Appendices A and E). No further causality of matter would be required for the further intellectual act of the soul alone by which we are aware of ourselves as sensing and so aware of the individual object sensed. The causality of matter would be a pre-condition for this further act of the soul alone somewhat in the same way that it is a pre-condition for the act of the illuminating power. The body is necessary for providing a sensed, imagined, or remembered individual essence for the illuminating power to make intelligible in act. Likewise, the body would be necessary for providing the individual object for the sensory act functioning as the

impressed specifier making the soul intelligible in act to itself. And the intellect's act of understanding the soul as performing the sensory act would make the sensed essence intelligible in act because, though the now intelligible object is still individual, the act of understanding would not be directly dependent on matter for the presentation of the sensed essence, it would directly depend only on the soul's sensory act which is an act of the soul alone.

In this way, we might be able to get rid of the illuminating power altogether. If the sensed essence was intelligible in act through the intellect's awareness of the soul's sensory act, the work for which the illuminating power is needed would have been accomplished. The intellect's awareness of the sensory act and its object would do for the intellect what the impressed species received from the illuminating power would do. Perhaps we could say goodbye to the agent intellect and its accompanying mysteries. By its prior act of understanding the soul as sensing, the intellect would have put itself in a state of act enabling it to produce the further act of understanding the sensed essence through a universal concept. In producing that further act, the intellect would also produce the expressed specifier that would make the essence present as universal.

Nor would the principle that an efficient cause must be distinct from its effect be violated by the intellect's putting itself in a state of act enabling it to produce a further act. As a sense faculty already has everything it needs to sense except the form received by the composite of substantial form and prime matter, the intellect is already in a state of act making it ready to understand an act of sensing when it takes place. When an act of sensing occurs, the sense faculty is producing a condition of the soul alone, the sense act, necessary for an act of a higher faculty of the soul, the intellect, to take place; for something must be intelligible in act before the intellect can understand it in act. The intellectual awareness of the sensory act would be a

condition of the soul causally presupposed to further acts of the intellect because it is the intellect's first awareness of physical natures. Cognitions are immanent acts. An immanent acts is an instance of life in which a living thing perfects itself by one part of the thing, a faculty, producing an effect distinct from itself, the immanent act, but an effect that remains within the living thing as a whole. The first intellectual immanent act is distinct from its immediate efficient cause, the intellect; so the intellect gives itself that new state of act without violating the principle that the efficient cause is distinct from the effect. Once the first immanent act exists, a condition necessary before the intellect can produce certain further immanent acts exists. So now the intellect can produce another effect distinct from itself but one that, as an immanent act, remains within the faculty that produced it as a perfection of that faculty. If the first act does not violate the principle that the cause must be distinct from the effect, neither does the second. And so on.

The idea of the intellect enabling itself to perform act B by first performing act A is nothing new. The intellect enables itself to perform an immanent act of judging by first performing immanent acts of conceptual awareness. Then, an immanent act of simultaneous knowledge of premises enables the intellect to produce the further immanent act of knowing the conclusion.

But this proposal of a possible way of doing without the agent intellect is NOT meant to provoke Aristotelians into endless debates on the matter. They would be pointless. Life is too short and the Aristotelian's solemn duty to share wisdom with those outside the tradition is too important and difficult to carry out to justify spending time on such debates. In the process of trying to share wisdom with others, however, problems like those perennially associated with the illuminating power and with the intellect's knowledge of individuals will inevitably arise. And to

put someone's mind to rest about them, it is often sufficient to have, not a knockdown argument, but an hypothesis showing how a problem can reasonably be avoided consistently with other Aristotelian principles. That is the spirit in which these thoughts on eliminating the illuminating power and on the intellect's knowledge of individuals have been offered. (John Deely also offers a way of eliminating the agent intellect in *Intentionality and Semiotics: A Story of Mutual Fecundation* [Scranton: University of Scranton Press, 2007].)

Appendix A: On The Epistemology of Sensation

Objects of sensation appear to exist in the same way, with the same firmness, as the knower, who grasps himself by reflection, exists. The existence we know by reflection is subjectively more certain. An apparent sensory experience of a really existing thing may in fact be an hallucination. In both genuine sensation and hallucination, I appear to be in direct contact with an existing external environment, and the existence that appears in such an experience appears as no less a genuine existence, and appears as no less a cognition-independent existence, than does the existence we know by reflection. When an experience is a genuine sensation, not an hallucination, I am in direct contact with the actually existing external environment known as such. What is the sensory evidence for the actual existence of the external environment?

We are enquiring how the independent existence of the object manifests itself in sensation. Note that the object's own existence is NOT among the features of things that we are able to distinguish from one another simply by sensing, such as motion and rest, red and blue, triangular and square, smaller and larger (in a spatial sense), one or many and more or less (in a numerical sense), etc. Because those are features the senses make us aware of, we can distinguish them from one another by means of sense cognition. But where is existence as opposed to non-existence among the values different sense acts make us aware of? Existence is not found in this sense act as opposed to another sense act from which existence is absent. Since every sensed object's, as opposed to an imagined object's, presence appears independent of the cognitive act, the independent existence of the object does not distinguish this sense act from that but is found in every sense act. If not, an act would seem to be an act of imagination, not of sensation.

1.

I close my eyes; then I open them. I am now in contact with a space external to the location where my act of sight is taking place and existing independently of that act. But am I making contacting with the environment, or is the environment making contact with me, or both? Although I am aware that the act of sight would not be taking place unless I had caused my eyes to open, I did not know what objects would enter my field of vision when I opened my eyes. That is a merely negative point. Beyond it, what is it about sensed objects that tells us they exist independently of the act of sight; what gives a sensed thing, as opposed to an imagined thing, that status as an object of consciousness?

Now I turn my head. As before, I do not know what objects will enter my field of vision next, but I know I am causing my eyes to move and, so, am causing my field of vision to change direction. When a previously unseen object, a statue, say, enters my changing field of vision, however, I am aware that it is something other than my act of vision, since that act already existed before the statue entered my visual field, and I am aware that my act of vision would not now be what it is if the statue were not what it is. If what I am seeing were different, my act of vision would be different. But when A and B are distinct and one of them would not be what it is if the other is not what it is, there is a causal relation between them, by definition (see Causal Realism). I am a cause of my act of seeing, but so is the object. My act of sight depends on the object's being what it is.

What I have just said about vision, however, could also be said about imagination. What an act of imagination is is also caused by the features making its object what it is; the act would be different if the object were different. So merely finding a causal relation between an act of cognition and its object does not answer the question what it is about an object of sensation that constitutes the evidence of real its existence. The way in which the objects of both imagination

and sensation are causes of those acts was called, by medieval thinkers, "the order of specification." That meant formal causality of the extrinsic kind, since what the object is is determining of the cognitive act (formal causality) even though it is not an entitative part of the act (extrinsic formal causality). One difference of sensation from imagination is that the independent existence in space of the sensed object is a part of the specifying cause of the act of sensation. And since the act of sensation would not be what it is without the independent existence of the object, included in the object's specifying causality of sensation, part of what the object is as specifying cause, must be a kind of causality other than specifying causality. For "would not be what it is without" indicates a causal relation, but a causal relation that sensation does not share with imagination. Entering the specification of sensation by its object is an additional causal relation of another kind, one that does not enter the causing of imagination by its object. Sensation has a causal dependence on the independent presence of its object, which dependence enters the object's specifying causality of sensation even though it is a causal relation other than specifying causality.

As I turn my head, the unexpected statue enters my vision as present in a spatial location external to the location where my act of seeing is taking place. And the statue enters my vision as occupying its location independently of my causality. In contrast, an object's causing of an act of imagination in the order of specification does not give the presence of that object to the subject the status of being independent of the kind of causality I contribute to the act of imagining; this or that object is present in my imagination due to my causing of an act of imagination. What evidence shows that the sensed object's presence is independent of my causing of the act of sight?

Since the specifying cause of sensation includes a causal relation to sensation in addition

to specifying causality, and since that additional causal relation is constituted by the fact that sensation of this object would not occur without the object's existence independent of the act of sensation, it is that additional way of causing the act of sensation by the sensed object that reveals the independence of its existence from sensation. Since the object's presence in sensation depends on itself rather than on the sense act and since the sense act depends on that presence, the object's presence must be independent of the sense act as a cause is independent of its effect. A necessary condition for my sensing the statue is that I put the area where the statue is in my field of vision by turning my head, but the statue's own presence in that area is what puts the statue in my field of vision (and the same is true of the presence of everything else that enters my field of vision in that area).

The kind of causality by which I cause acts of imagination and sensation is called, in opposition to causing in the order of specification, "the order of exercise," efficient causality. Where the objects are causes of imagination and sensation in the order of specification, the cognitive subject is the cause of these acts in the order of exercise; for the subject is the efficient cause of these cognitive acts. Since the subject is the efficient cause, the cause in the order of exercise for all cognitive acts will be the same, while the cause in the order of specification will differ for each act. The reason why any act of external sensation or act of imagination exists is that I cause it by my faculties for efficiently causing external sensation or imagination, respectively; the reason why such an act is a cognition of this object as opposed to that must include the fact that this object as opposed to that is the act's extrinsic formal cause. The causes of these acts in the order of exercise and specification are coordinated, as efficient and formal causes are in any transaction; they "work" together, causae ad invicem sunt causae. But the object's causing of an act of imagination in the order of specification does not give the presence

of that object to the subject a status as independent of my causality in the order of exercise. The causally independent presence of the object in the specification of sensation, however, is independence of my efficient causality of sensation, causation in the order of exercise.

2.

We concluded above that a sensed object's, as opposed to an imagined object's, proper way of causing the cognitive act manifests the independent existence of the object. How? Like any cognized object, the sensed object is a cause of cognition in the order of specification. But the independent existence of the object is unlike all other specifying causes (reflexive acts excluded) in being part of the specification of every sense act. In one act I sense this; in another I sense that. But as objects of sensation this and that both have an existence independent of sensation. The fact that existence is part of the specifying cause of all acts of sensation gives a clue as to what it is about their objects that differentiates them from imagined objects. The reason why the subject is a cause of every cognitive act is that the subject is their efficient cause. One act is a sight of this; another act a sight of that. But both are acts of sight because they are caused by a subject with the faculties necessary to efficiently cause acts of sight, whether of this or that. But the subject is not the sole cause of sight in the order of exercise. My awareness that the object is independent of my causing of sensation in the order of exercise is the same as awareness of the dependence of sensation on the object in the order of exercise.

But to say that the sensory object is action known as action is to say that action as action is a cause of sensation in the order of specification. This can be the case if and only if that action is also a cause of the sensation in the order of exercise; action as emanating from an external agent could not be a cause of sensation in the order of specification unless it was also a cause in the order of exercise. If the object were not also a cause in the order of exercise, the powers by

which we cause sensation in the order of exercise could bring about a sensation of an object in the absence of an external action, as we do in imagination and memory. Since sensation is distinguished by awareness that has action as such as its object, sensation cannot exist without the existence of that action; and that is a causal dependence not shared by imagination. So action that is a cause in the order of specification must also be a cause in the order of exercise, such that whatever other efficient causality the sense act might require, it cannot take place without that physical efficient causality. Thus, the object of sensation includes, as one of the features that causes sensation in the order of specification, the environment's causing of our sensation in the order of exercise.

Again, I close my eyes, but this time open them in a pitch black room. No act of sight takes place. Now the lights come on. What is the difference between the experience I am having now and the experience I had a moment ago? A moment ago I had done everything I could to be ready to be in visual contact with the environment, but that did not occur. Something else had to be done, but not by me as efficient cause. The environment had to make contact with me; therefore it had to do something. The environment had to act on me, had to act in a certain way on my sense organs, had to cause an effect in my organs of sight as an efficient cause. I are aware that in a pitch black room the sensory subject's efficient causality is insufficient, not just to cause a sight of this as opposed to that, but to cause ANY act of sight at all; I am aware that more efficient causality is needed. When the light comes on, I am aware that the needed additional efficient causality has been supplied. I am aware of the independent existence of the environment by being aware of the environment's action on me.

So the awareness that the object causes in the order of exercise is AN awareness whose cause in the order of specification includes that causing of itself in the order of exercise by the

environment. At least part of the object we are aware of is action, efficient causality, on the sensory power, perceived as action, as causality or causal dependence. Actual existents are sensed as such since they are sensed as causes of our awareness in the order of exercise. An imaginary apple and an actually existing sensed apple are both causes of our cognition in the order of specification. The sensed apple is also a cause of our cognition in the order of exercise, and in sensation we are aware of the object as causing our cognition in the order of exercise. The cause in the order of specification includes a causality necessary for the sensation in the order of exercise.

This awareness of the actual existence of the external environment is not inferential but direct; for to be aware of action as action is same as being aware of it as coming from an agent, and to be aware of actually existing action as action is the same as being aware of it as coming from an actually existing agent. Awareness of existing action as action includes, not by inference but by its identity with itself, awareness of the existence of an agent as an agent, as something from which the action comes.

This analysis is meant to supplement arguments I have given elsewhere that sensation makes us aware of the action of the environment as action and ipso facto of the independent existence of the environment. (See Causal Realism, Ch. 11, "The Problem of Thing and Object in Maritain," p. 41 and n. 26, "Wittgenstein as a Gateway to Analytical Thomism.") Generally, my arguments are from effects, for example, the words we use to distinguish sensation from imagination, to an explanation of those effects by the causal character of sensation's objects. None of my arguments is an absolute, epistemically necessary, proof. The object of sensation is a first principle in human cognition just as much as the principle of non-contradiction is. First principles are not subject to direct proof, only proof by reductio ad absurdum.

While I do not have such an indirect proof, I do not discount their possibility. For example, a compact version of such a proof might be Poinsot's argument that if the senses did not have real existence for their object (which would require awareness of action as such), none of our faculties of knowledge could achieve their proper objects. That way of arguing may seem to beg the question. But an unpacking of the argument could bring out the epistemically necessary truth that faculties cannot err regarding their proper objects. Acts are specified by their proper objects; so an act of type X would not exist unless an object of the kind making acts of type X what they are had been attained. So perhaps it can be argued that unless the object of the faculty on which all our other cognitive faculties depend for their objects is extramental being grasped as such, none of our other faculties could be inerrant regarding their proper objects, which is impossible. (Garrigou-Lagrange's arguments in Le réalisme du principe du finalité may be worth checking on this point. I have not had time to do so.)

3.

Since the object of sensation is a first principle in human knowledge, the fact that the environment is acting on us is per se knowable in sensation, just as self-evident truths are per se knowable by understanding the meanings of their terms. If we understand their terms, we know their truth; if we are having a sensation, we are sensorally aware of the existence of the environment as acting on us. Of course, epistemically necessary proofs in mathematics and logic (not to mention philosophy) can be deceitfully imitated; cleverly constructed fallacious proofs can give the appearance of being just as sound as genuine proofs. Sensation can be deceitfully imitated also; we call experiences that imitate sensations hallucinations. In hallucination as opposed to imagination (as it normally occurs), there is the appearance of the actually existing action of the external environment as there is in genuine sensation.

How do we distinguish between hallucinations and sensations? Through inductive reasoning. By the time a child has developed the sophistication to understand that an experience may be hallucinatory, she has had tens of thousands of hours of genuine sense experiences that provide her with sufficient principles to make a sound inductive argument determining whether an experience is an hallucination. Does that pink elephant in the middle of my bedroom really exist; or am "only imagining" it, not actually seeing it? Well, if it's really there, I should also be able to feel it by the sense of touch; if I pat it, I should hear a sound; if I shout, it should show a sign of hearing me; if I walk around it, I should be able to see and touch all its sides; if I close my eyes and open them, it should still be there; if I come back later, it should still be there; if it really exists, there should be some reasonable explanation of how it got there; if it doesn't look as if there could be such an explanation, it probably isn't there; if it's really there, other people should behave accordingly; they should show surprise when they come into the room; they should walk around it instead of walking through the space where I see it standing; they should answer my questions about it consistently with my perceptions of it; etc.

When we are in doubt whether the existence of object X is an hallucination, we don't first ask "Is this a genuine sensation of X or not?"; we ask "Does X really exist or not," "Is this object of awareness a real existent or not?" Later, we ask "Was I really seeing it or hallucinating?" I.e., was I performing the cognitive function that takes place through my faculty of sight or not? The reason we can later ask the question that way is that we are later aware that real existents are first made known through the function performed by our faculty of sight because that function is awareness of the real existing action of things on us as the action of things on us. Or we first ask "Does the object really exist?", and if the answer is no, we then conclude we were not really seeing it. At some point, we become aware that some faculties have objects that really exist. So

we must start with awareness of the real existence of some objects and as a result become aware that the acts of knowing them, and the faculties of those acts, are acts and faculties bearing on real existence.

When a person acquires a considerably higher degree of sophistication, she may ask other kinds of questions. Recognizing that inductive reasoning is causal reasoning and that the objects of hallucinatory experiences appear as really existent as objects of sensations, she might ask whether my inductive certitude of the reality of sensed objects is just certitude of the existence of something behind what I experience, something I do not directly experience but infer to exist as a cause of my experiencing the objects I do. Many people have gotten to that level of sophistication, but fewer have gotten to the next level, the level of seeing that the analysis of sensation just given implies a negative answer to that question. From the fact that we use causal reasoning, it does not follow that the realism we conclude to on its basis is indirect or inferential realism. Inductive reasoning is causal reasoning, and the issue we are reasoning about is causal. The issue that inductive reasoning settles, however, is not whether there are causes hidden behind the objects we experience to be reached only by reasoning but whether the object of sensation is causal action known as action and ipso facto known as revealing the existence of its cause. The conclusion of the inductive reasoning is whether the experienced object is really what it claims and appears to be, the actually existing action of the environment of the sense organs, or whether the experience is really what it claims and appears to be; an awareness of the really existing action of the environment as the action of the environment. If such an experience is not an hallucination, it is a genuine awareness of the action of the environment as the action of the environment and so a direct, non-inferential awareness of the existence of the environment.

Inductive reasoning is causal reasoning and the difference between sensation and

hallucination is essentially causal, not inferentially causal but directly causal. By inductive reasoning, I conclude that an experience is a genuine awareness of action on my sense organs as action, that is, that my present sensory awareness is a genuine direct contact with the cognition-independent existence of the acting environment. Or by inductive reasoning, I conclude that an experience is not what is claims and appears to be; that what claims and appears to be awareness that I am being acted on by the environment is not that. Something other than a sensory experience is going on. If so, my experience is not a genuine sensation but an hallucination. But if an experience is not hallucinatory, it IS an awareness of action as action, of dependence on an existing cause as dependence on an existing cause. So inductive reasoning does not convince me of the existence of the external world by concluding to the existence of a cause hidden behind what my senses are aware of. (See the footnote in Joseph Owens An Elementary Christian Metaphysics on the dispute between Gilson and Mercier. My position is the midway between Gilson and Mercier.)

Inductive reasoning can give us KNOWLEDGE (certitude of truth caused by awareness of evidence sufficient to exclude the opposite from truth) as opposed to mere rational belief. But that knowledge is knowledge ABOUT what it is rational to BELIEVE and what is not. The question is whether it is rational (whether it achieves the goal of reason) to believe that pink elephant exists, and I can KNOW that it is not rational to believe it but only rational to believe the opposite. (The goal of reason is certitude of what exists outside of our mental states caused by awareness of evidence. The only kinds of evidence of extramental existence available to reason are direct experience or the evidence of what is NECESSARY for the existents of which we have direct experiential evidence [or the testimony of a witness whose trustworthiness is supported by these two kinds of evidence]. The latter evidence is, by definition, knowledge of

causes necessary for directly experienced existents; for it one of distinct existents A and B would not exist without the other, there is a causal link between them. In the absence of either kind of evidence, it is not rational to believe the existence of something, because the goal of reason cannot be achieved.)

Some people have reached yet another level of sophistication, however, where they ask whether all our experiences have been "hallucinatory" in the sense that we could be nothing but brains in a vat all of whose experiences are being artificially produced. The even more sophisticated response to this question has two steps. First, if we were brains in a vat, the outside environment would still be acting on us, and our awareness of that action would be CORRECT awareness of the existence of the outside environment, though not of its sensory details. But second, and as importantly, we can know as an epistemically NECESSARY truth, not just that it is unreasonable to believe the opposite of this or that empirical statement, but that it would be TOTALLY unreasonable to believe the brain-in-a-vat hypothesis. For we know that the only POSSIBLE evidence on which reason can base any belief starts with experience. So unless our allegedly artificial experiences themselves give us evidence for believing that they are being artificially produced, only the opposite belief is even possibly reasonable. (A manipulator of brains in a vat could give them experiences that would be evidence, especially as interpreted by epistemically necessary causal truths, that the experiences were being artificially produced.)

Inductive reasoning is based on our knowledge of the necessary truth of principles like "Every change has an efficient cause" and "Causal situations that are similar in all relevant respects result in similar effects." The objective concepts these principles employ are ontologically formed rather than empirically formed. I discuss how our knowledge of such truths derives from sensory experience in Appendix C.

This epistemological excursion began by comparing the firmness with which the objects of both sensation and reflection appear to exist. Note that in both sensation and reflection, awareness of existence takes place through non-inferential awareness of causality. Self-awareness is awareness of the self as the cause of its acts (see Appendix D); awareness of the existence of a sensed object is awareness of it as cause of its action on us.

Appendix B: The Ontological Status of Sensory Qualities

Something this analysis must account for is why sensation is awareness of a sensed quality as a quality of an external thing. Does this analysis succeed in explaining how a sense quality gets to be objectified as a characteristic of an external thing?

1.

Is red something more than a merely a phenomenal object having only an intentional existence? And are the senses lying when they present red as if it were a feature belonging to a surface in the surface's extracognitional existence? As ontological, in the sense opposed to empirical, these questions are parageneric, and so the answers to them must involve an apparent simultaneous yes and no (see the last chapter of Causal Realism and the brief document,"How Simon Trumps Cajetan on Analogy,"a the website Resources for Modern Aristotelians, www.aristotelian.info). The shade of red I am now seeing cannot be an entitative feature of the surface; if it could, an infinite number of distinct shades of red could exist entitatively in the same place at the same time, since different people can see different shades at the same time, depending on lighting, distance, angle, shadows, etc. (as well as on the subjective conditions of our organs). But from what has been said so far about the ontology and epistemology (both of which are ontological as opposed to empirical) of sensation, we can also see how that emphatic "No" must also be accompanied by an equally emphatic "Yes."

In sensing a red surface, I am aware of it as an element in an environment that is now acting on my sense faculties. For sensing and imagining a red surface to be distinguished in my consciousness, I must sense the red surface as an element in a causally active environment; so I must sense the environment including the red surface as actually acting on me. And if I sense that environment as acting on me, I am aware of it as acting on me in a red manner, rather than a brown or green manner, to the extent that the environment's action makes me aware of red rather than brown or green. So in sensing the action of an environment containing a red surface as action, I am aware of red as a manner in which the environment is acting on me at the same time that I am aware of red as a feature of a red surface. And these are not two different awarensses of what red is; they are the same awareness. If they were not the same awareness, either it would not be true that sensation makes me aware of red as if it was a feature of a red surface or it would not be true that I distinguish sensing from imagining a red surface by sensing's making me aware of the action of the environment as action.

Awareness of action as action is awareness of it as something coming from a source, an agent; so awareness of the existence of action as action is noninferential awareness of the existence of the agent insofar as it is an agent. Awareness of red as the way a surface acts on us makes us directly, noninferentially aware of the existence of the surface as an agent. We can be aware of a red surface, not just as a surface, but as an agent only by being aware of red as the manner in which the surface is acting on the senses; for whatever action is, a thing is constituted an agent by its action. To be acting is what it is for a thing to be an agent; without action, it is not an agent. Since a thing is constituted an agent by its action, we are aware of a red surface as an agent by being aware of red as something belonging or pertaining to an agent that constitutes it an agent, namely, its manner of acting.

We can never know bare existence, know existence without having an at least minimal answer to the question "What is it?" for the existent we know. We always know the existence of some-thing and so of some "what." In our example, we sense something red. And as a result of having the color red as an object of sensation, we also know something extended, something at rest or moving, something curved or straight, etc. So we can say that red is a manifestation of what something is to the senses, a way something presents what it is to the senses, a way that it manifests that it is something extended, at rest, curved, etc. But our question wasn't the ontological status of extension and shape; it was the ontological status of color, and why we sense color as a feature of a surface. Whatever red is, it is really non-identical with features like extension and shape, since red can come in different extensions and shapes and the same extension and shape can come in different colors.

Awareness of red as the way the surface acts on us is the same as awareness of red as the way the surface presents its existence to the senses. Awareness of action as action is awareness of it as coming from a source, and hence as presenting, manifesting, the source, and awareness of really existing action as action is awareness of it as coming from a really existing source, and hence awareness of the action as presenting, manifesting, its really existing source. But that source *is not* just an unspecified agent; it is an agent having a certain causal disposition, the disposition to act in this manner in these circumstances, as a feature. And the source is *not presented as* just an unspecified agent; it is presented as having a certain causal disposition as a feature. For whatever else action is, it is a communication between things by means of features that dispose them to act in this way or that. So to be aware of an agent as acting in this way or that is to be aware of it as having the disposition to act in this way or that. When the existence of an agent is present in consciousness as the existence of an agent, it is present as the existence of

something with a causal disposition by which the thing presents itself in this manner. For just as we are aware of action as that which constitutes something a cause, we are aware of action as that which constitutes a causal disposition's being a causal disposition.

So just as we sense red, a surface's manner of acting, as something related to a surface insofar as the surface is an agent, since action is what constitutes it an agent, we sense red as related to the causal disposition by which the surface becomes an agent, since action is what constitutes the feature by which a thing acts in this way and not that a causal disposition. Since the awareness is of red as a manner in which an agent acts and so as something related to an agent insofar as it is an agent, it is at the same time awareness of red as a manner in which the agent, a surface, is disposed to act and so as something related to the surface insofar as it is disposed to act, awareness of it as related to a feature characterizing the surface insofar as what the surface is includes a disposition to act in the way it is now acting. And the relation in question is that of presenting, manifesting what the disposition is, or what the agent is insofar as it has a disposition by which it acts in this manner.

Action seen as action is action objectified as a communication from a disposition by which the agent acts; so it is action objectified as a manifestation of a disposition by which the agent acts. Action manifests the agent as disposed, by being what it is, to act in this manner; action manifests, and we objectify, what the agent is to the extent that what it is includes a disposition to act in this manner. For the sense quality to objectified as being in the thing is for the thing to be objectified as having a causal disposition which is characterized by this manner of acting. To be aware of red as the manner in which we are acted on by the environment is to be aware of it as the way the environment is acting on us by means of its dispositions for action; it

is to be aware of red as a manifestation of what the causal dispositions of the environment are. And that is what red is, a way the causal dispositions of the environment present themselves to us. So we are aware of the causal dispositions of the environment as characterized by this manner of acting and aware of red as a characteristic of the causal dispositions of the environment.

Sensing red as a feature of an agent amounts to sensing it as an agent's way of acting, or to sensing an agent as disposed to act this way, because it is sensing red as the way that an agent presents its existence, and that of the disposition through which it acts, to the senses; for a thing acts through features that dispose it to act in this way or that. When a surface looks red in our vision, the environment is acting on us by reflecting light of a certain wave length; so in experiencing the reflection of light in its nature as action, we become noninferentially aware of an agent with a causal disposition to reflect light in this way in these circumstances.

And if we see the same surface when it looks orange, when it acts on us in an orange manner, the disposition we see the surface as having is the SAME disposition; for the feature or features by which the surface was disposed, in the original circumstances, to reflect light of red's wave length is the same feature by which the surface is disposed, in these different circumstances, to reflect light of orange's wave length. To see the surface as red at one time and orange at another is to see both red and orange as manifestations of what the surface is because it is to see them as manifestations of the same feature by which the surface is disposed to reflect light this way at one time and that way at another.

The senses do not lie. Seeing a surface that looks red, that acts on us in a red manner, is seeing the surface as having the disposition by which the surface, in these circumstances, reflects light of that wave length. And both when we see the surface as red and when we see it as orange

we are seeing what the surface is CORRECTLY; we are seeing what an identical disposition, an intrinsic feature actually existing in the surface, IS: a causal disposition to act in these different ways in these different circumstances. If the surface did not appear red to us in one circumstance and orange in another, we would not be correctly seeing what its causal disposition to reflect light is; for by that disposition, the surface must cause the reflection light in accordance with the laws of physics. In seeing a red surface, we are seeing the surface as having a feature or features by which the surface is disposed to reflect light of that wave length in this circumstance.

If, when red exists intentionally in vision, we are aware of it as a manner in which a surface is now acting on the senses (is now reflecting light to the eyes), then we are noninferentially aware of red's belonging to the surface as the way the surface is making its entitative existence, and the entitative existence of its disposition to act in this manner, present to the senses, and so a way that the surface's entitative existence and that of this disposition exist intentionally in vision. And epistemologically that is the core issue: how does the extracognitional existence of a surface exist intentionally in vision?

Since it does, the senses are not lying about the entitative existence of the surface's action, of the surface's disposition to so act, and of the surface itself as the agent of the action, when the senses make us aware of red as the manner in which the surface is acting on the senses in these circumstances. The reason is that the surface's "looking red" is identical with sight's awareness of red as the action of an agent insofar as it is an entitatively existing agent disposed (whose features include the disposition) to act in this manner in these circumstances (and in an orange manner in others). So speaking carefully, but justifiably, we can say that red is something belonging to the surface as opposed to merely being a phenomenal object belonging to the act of sight. For the disposition to act "redly," which is what "looking red" means, in this circumstance

(and act "orangely" in other circumstances) is something belonging entitatively to the agent as agent, and that disposition is what sight is made aware of when we are aware of a surface acting on us in a red manner; for we are aware of what the surface is, not just as a surface, but as having a causal disposition to present its existence to the senses in a red manner (to reflect light in this manner).

When I am seeing a red surface, I am being communicated to (acted on) by an agent that is, in effect, saying (directly saying, not asking us to infer) "I am an entitative existent that has a causal disposition (including extension in two dimensions, opaqueness, sufficient size to be seen, etc.) to present my existence to you in the manner in which you are seeing me present it in these circumstances; what you are seeing is my presentation of my entitative existence, and therefore my existence as possessing the disposition to do so, to your sense of sight." The senses do not lie when they present red as a feature of a surface, since that amounts to presenting red as the way the surface is acting on us and so amounts to presenting the surface as something with the characteristic of being disposed to act in this way in these circumstances.

2.

The feature or set of features objectified by external sensation, imagination and memory must be identical, otherwise what we are imagining or remembering would not be what we sensed. Consider imagination first. How then can we say that sensed red differs from the imagined red in being sensed as action, being objectified as the way the environment is acting on us? Since the features of both objects are the same and there is no feature in the imagined red making it action, how can the sensed red be an action? The same set of features must be objectified in different ways, once as action, once not. But what can this mean?

The features in both cases are objectified as dispositions existing in the sensed a thing,

causal dispositions, dispositions to act. In sensation they are objectified as causal dispositions by which something is actually acting on us; in imagination they are not objectified as dispositions by which something is actually acting on us but as dispositions by which something is potentially acting one us, by which something has the ability to act on us. In imagining a red surface I am imagining something that would be acting on my senses in a red manner if I was seeing it instead of imagining it. But causal dispositions do not change when they are acting or not acting: the change is in the patient, not the agent. So the same features are sensed and imagined.

In imagination, we are aware of red as the manner in which the active dispositions of the environment can potentially act on us. In sensation we are aware of red as the manner in which the active dispositions of the environment actually act on us. To see something as red is to see what it is, at least in part, as being disposed to act redly because it is actually acting redly. To imagine it is red is to imagine it as disposed to act redly without being aware of it as so acting.

The form through which sensation occurs, that is, the action received, has an entitative relation of dependence (or is an entitative relation of dependence) on an external efficient cause. In sense awareness, that entitative relation also exists intentionally. In imagination, the object exists intentionally, but its entitative relation to its efficient cause does not exist intentionally; for the form through which imagination takes place does not have (or is not) an entitative relation of dependence on the efficient causality of the object but of the subject of awareness. In sensation the action received, the impressed specifier, which is a feature of ourselves, a feature existing entitatively in us, has (or is) a relation of dependence on what is not ourselves, a relation of dependence in the order of efficient causality. In imagination, a feature of ourselves, the expressed specifier, the image in the psychological sense, has a relation of dependence on our

own efficient causality, not on the efficient causality of the environment, except insofar as the environment supplies a pre-condition for our production of the specifier.

The object of the soul's act of sensing *and* the form by which the sense power produces its act are the same thing: the action of the environment. Memory and imagination also objectify the action of the environment, but they do not objectify it under the aspect of an action presently occurring. For memory and imagination do not take place through that very action as the form through which the object is made present. In sensing, the form through which the object is present is that action itself.

What is the character of the object of a memory that allows us to distinguish it from a mere object of imagination, since the current action of the environment is absent from both objects? In imagination, we have an awareness of an object, like a red surface or a musical note, as potentially thrusting itself upon us, as something that can potentially thrust of itself upon us, or be thrust upon us. In memory, we are aware of an object as something that did thrust itself upon us, that was thrust upon us, that did dominate over us. So in memory, we have an awareness of ourselves as having been dominated over in this way, as having had this object thrust upon us, etc. How does an object of memory present itself as if it is something that previously acted on the senses? It can do that if (and perhaps only if) genuine remembering, as opposed to imagining, includes, in addition to an awareness of objects that once did but are not now acting on us, an awareness of the conscious subject as having passively received the action of those objects. For in sensation there is an awareness of the subject as passively undergoing the action of the environment that is concomitant with the awareness of the environment as acting on the senses. (And these awarenesses are in some sense identical, at least identical "in subject." For whatever self-consciousness is on the sense level, it is not a secondary act that has a prior,

distinct act of the knower, the sensing itself, as its object. On self-consciousness, see Appendix D; for more on memory, see Appendix E.)

3.

If this account succeeds in putting the sensed quality, precisely as a sensed object, in the thing, that is, if it explains how the sense quality gets to be objectified as a characteristic of an external thing, does it have the converse problem: Does it imply that the eyes should become red when something looks red since red is "the manner in which the environment is acting on the sense organs?" No. Red is an agent's manner of acting on the eyes objectified as related to the agent, as the way an agent is disposed to manifest itself to us, not related to us, as if it was a characteristic of us. To say that red is an agent's manner of acting on the eyes is to say that an agent is reflecting light of a certain wave length on the eyes, but that is not the same as saying that the eyes are also reflecting light of that wave length to other eyes. But the latter is what it would mean for the eyes to become red (in entitative existence). If acting in a red manner meant that, it would mean that the environment causes our eyes to look red to other eyes by reflecting red light in turn. In sensing red, the eye is being acted on entitatively by reflected "red" light but does not appear red to another eye; for it does not itself entitatively reflect red light to another eye.

Consider different example, an oblong shape in our visual field. Here, unlike in the case of red, the sense organs do have a physical analogue of the perceived object in them: the eyes do not reflect light of red's wave length, but light does form a pattern with an oblong shape on the retina. The reception of that shape on the retina, however, is not what it means to see an oblong shape; seeing an oblong shape does not inform us that light is making an oblong shape on the retina. To see the shape is to relate to it, not as a quality of the subject that sees, but as being the

way an agent presents itself to us by its action. To see the shape is to be aware of a manner in which we are acted on and so aware of an agent's way of being an agent: the agent's way of being an agent is characterized by an oblong shape; the manner of acting of something in the environment is characterized by oblongness; its manner of acting occupies that kind of shape in the environment. And so the disposition to act of something in the environment is characterized by oblongness; the feature by which it acts occupies that kind of space in the environment. What the agent is is entitatively characterized by an oblong shape.

The agent's action, and so its dispositions to act, obey the laws of physical geometry. Bodies reflect light to other bodies according to the laws of physical geometry; so physical geometry governs a reflecting agent's manner of acting on the organs of sight. So what one person sees as reflecting light "oblongly" and so as reflecting light by a disposition that occupies an oblong shape, another person viewing from a different angle might see as having a disposition to reflect light "trapezoidally" and so by a disposition that occupies a trapezoidal shape. If these differences in their visual perceptions of the SAME body did not exist, they would not be CORRECTLY aware of the oblongly and trapezoidally shaped colors as ways in which something is acting on us and so is disposed to act; for what its manner of acting is must obey the laws of physics that govern the reflection of light.

Now compare red to oblongness. Although the retina entitatively receives light in an oblong pattern, the eye does not become red entitatively, that is, the eye does not entitatively reflect light of the red wave length. Red exists in the act of sight intentionally; for red is the agent's manner of acting existing intentionally in sight. Entitatively, the senses do not relate to the action received from the environment as action; they relate to it as passion. In order to relate to it as action, therefore, the faculty of sight must relate to it in another mode of existence than

entitative; the faculty of vision must make the agent's manner of acting exist intentionally in sight. It makes the agent's manner of acting exist intentionally by making red exist in intentionally as a surface's disposition to act the way it is acting when it causes this color to be sensed as one of its features.

Appendix C: Sensation and the Intellectual Cognition of Essences

ALL of our later intellectual objective concepts are arrived at on the basis of original intellectual objects like something-red, something-moving, something-at-rest, something-occupying-more-space-than-something-else, something-rectangular, something-rough (as objectified by the sense of touch), etc. In other words, what is first known is being (something) of a sensible nature (red, moving, etc.) This appendix considers important points about the results of the illuminating power's work that are related to this fact about what is first known.

1.

Our primary concepts logically include sensory distinguishable objective values, like red and green or cold and hot, and an objective value that is not sensibly distinguishable expressed by the word "something." (Logical inclusion is the relation obtaining between objects as objects when one word, like, "red" communicates all the information another, like color,"communicates but communicates more information.) "Something" means a being, a thing, an existent. The reason the objective value it expresses is not sensibly distinguishable is that the aspect by which that word objectifies things is the fact that they exist. "Something" means some thing, some being, some existent, something-that-exists. Existence is not a feature which the senses can distinguish from other features and thus a not feature by which the senses can distinguish one thing from another.

So we cannot acquire our concept of existence the way we acquire our concepts of

sensible features. (If we did not have that concept, we could not ask philosophical questions about existence nor make any judgments abut the metaphysical properties of existence, as opposed to making contingent concrete judgments like "Trees exist" and "Disease exists.") We acquire our concept of existence by and in the act of judging that an objective concept like redness or something-red has an instance. For while being-an-instance-of-a-concept describes something from the viewpoint of the fact that it happens to be an object of cognition, that which we consciously attribute to an instance of a concept when we judge that it exists is a value, existence, that must causally precede the state of being an object of cognition, and a value that we are conscious of as causally preceding the state of being an object of cognition. Since judgment is not an abstractive psychological act, such acts are excluded from the explanation of how we acquire the concept of existence, except insofar as the judgment that a sensory objective concept exists may use a sensory objective concept acquired by abstraction in the psychological sense.

But if we do not have the objective concept of existence until after we make a judgment using previously acquired objective concepts, how can the previously acquired concepts already logically include concepts like some-thing, some-existent? We cannot express the fact that ontologically formed concepts (existence and its cognate concepts) are logically included in all our concepts until we make judgments that give us the objective concept of existence. But once in possession of that concept we can recognize that our primary intellectual objects are objectified precisely as units able to be judged to exist and therefore that they have all along been objectified as what we can recognize to be capacities for existence, potential existents. They have always logically included that relation to existence (a transcendental or "material" relation), even though we cannot recognize that relation as such until we have the concept of

existence. For if they were not already objectified in a way that made them eligible to also be objectified in judgments of existence, we could never use them in judgments of existence and so never achieve the goal of intellectual knowledge which is explicit awareness of what really exists beyond our own mental states as what so exists. And this way for existence to be logically included in our primary concepts is strictly implied by the way sensation presents its objects; for its objects are never discrete sensible features, like redness or oblongness, but units of diverse sensible features, like an-extended-shaped-colored-moving-body. And these features are sensed as modes of the environments action on us and hence as features of what we can later recognize to be sensorally presented as really existing units of multiple features.

After we have developed ontological objective concepts, we can also recognize what is objectified in our most basic concepts, something-red, something-moving, etc., as essences, substantial and accidental. For from the fact that something is red, we can later know this much about its interior structure: what it is (its essence) makes it capable of being red, oblong, moving etc; its substantial essence is something that makes it able to support accidents like color, shape and motion. (This is self-evident to the sufficiently "learned.") If not, it would not be something-red, something-moving, etc. From this most primitive intellectual grasp of essence develops all our knowledge of what things are, both ontological knowledge and empirical knowledge (see Causal Realism, Chapter 9). In addition to our continuing acquisition of new experiences, the most important intellectual causes of that development are (1) the knowledge that what things are conforms to necessary causal principles, (2) the use of mathematical objective concepts to form precise concepts of material attributes, and (3) communication with others whose knowledge is developing from experience in the same ways (see Section 3 of Appendix C).

But the fact that what the intellect first conceives, from which all our subsequent

intellectual knowledge develops, is being of a sensible nature (something red and/or moving, etc.) creates two obstacles that the development of all our further knowledge must overcome.

2.

The first obstacle concerns the sensible nature side of our most basic concepts. As they exist in sensible natures, perfections are mixed perfections. That may be the reason why concepts like "red" provide such weak examples of the universality of concepts. Given all the different shades of red, what is the universal content common to all of them? Sometimes it is easy to think of two different shades as if they embody the same specific value, redness. But often it is difficult to decide whether we should still use the word "red" at a certain point on the color scale. The fact that reds fall into a continuum of varying shades is a direct result of color's being a mixed perfection. For perfections that are essentially dependent on matter and only such perfections belong to extracognitionally real continua as well as to logical species and genera (see Aristotle's Physics; if you haven't read it, SOYT; you haven't been introduced, in the best, strictest and most relevant sense, to all subsequent Aristotelian philosophy, including that of Aquinas — and I'm not talking about the proof of the prime mover in the Physics.).

The objective concept, red (or redness or what it is to be red), is an essence whose instances include of varying shades of color on a continuum. For the fact of being essentially material causes something to be continuous in the sense of being part of a continuum. (Extension, motion and time are continuous as being potentially divided to infinity. Red is continuous as potentially existing, potentially realized, at various places on a continuum.) To get an idea of how being subject to varying degrees on a real continuum affects the logical universality of an objective concept, consider another sensory example, sweetness. Assume that there is only one cause, sugar, making things taste sweet such that there is a minimal amount of

sugar necessary and sufficient for something to taste sweet and that the more sugar something has, the sweeter it tastes. The objective concept of sugar, or of a-certain-amount-of-sugar, would not be identical with sweetness. Sweetness would be an EFFECT of sugar (whether we knew that or not is irrelevant to this example). But we could have a universal concept sweetness amounting to being-at-least-this-sweet, the minimal degree of sweetness. That concept could apply univocally to every degree of sweetness, and only to degrees of sweetness; from the point of view of the objective concept, there might be no vagueness as to where the scale of degrees of sweetness begins.

Even such a concept, however, would not eliminate vagueness in our subjective judgments about the use of that concept. We could still be in doubt as to whether to call a particular taste sweet or not, and something that tastes sweet to us at one time might not taste sweet to us at another, even if there is no change in the amount of sugar. For the makeup of a physical cognitive subject and her sensory organs are just as much affected by the continuous character of mixed perfections as are physical cognitive objects. And the action of the environment (here the action of sugar) on the sensory organs is received according to the patients's mode of receiving, as all transitive actions are. Here, the patient's mode of receiving is affected in its essence by continuity such that the tongue will be so disposed that the soul's faculty of taste will objectify the effect of the same amount of sugar as being of different degrees of sweetness at different times. Still, each objectification would correctly objectify the action of the environment as such, since the action exists in the patient and the way it so exists obeys physical laws of action governing the patient as well as the agent. And sometimes our organs of taste will seem to us to be sufficiently dulled that we will not know whether or not to apply our universal objective concept of sweetness. It would not follow, however, that the concept itself

lacks universality or a clear bottom limit. Whatever is lacking is in our ability to use the concept in this circumstance, not in the concept itself.

But even if there could be a concept of sweetness that lacked vagueness because it was a definite effect of a definite amount of sugar, the only way to similarly exclude vagueness from a concept like red would be to arbitrarily set limits for calling a shade on the color continuum red. On one side then, the "of a sensible nature" side, our most basic objective concepts, the concepts that all our other objective concepts depend on, are afflicted by an apparently (and perhaps really) incorrigible vagueness. Where does the continuum of specific concept, red, end and that of orange or yellow begin? Does it even make sense to ask that question, given the essentially continuous nature of mixed perfections. The genus/species distinction between concepts and the uncontroversial universality of the relation of a genus like color to its species need not imply that a specific objective concept like red can be uncontroversially predicated or denied in every individual case. Matter not only causes individuation within a species but also the continuous character of mixed perfections, and these are different effects of matter.

But all that is needed for a concept to be univocally universal is that it be univocally predicable of more than one case, not that its predicability or deniability be clear in every possible instance. Even if two red things never reflect light in exactly the same way, the differences between their shades of red can be subliminal relative to our sensory faculties of discrimination; so we can have a objective concept of that shade which is univocally predicable of more than individual, a univocally universal concept. But if a concept univocally predicable of at least two individuals is a mixed perfection, the existence of other individuals on the same continuum whose instantiation of that perfection will not and should not be clear to us is always a possibility. The existence of unclear cases never disproves the existence of clear cases; for the

existence of negative cases never disproves the existence of positive cases. So vagueness with respect to some individuals is a logical relation compatible with clear univocal predicability of at least two individuals. (And again, vagueness in the predication of "red" or "orange" does not compromise clarity in the predication of "color" or "quality of an extended surface.") Vagueness is a logical value of a sufficiently different kind from univocity that these relations are not contradictory. The univocal individuation of an intelligible object and the continuous character of the object are different, though both are necessary, effects of matter.

3.

The second obstacle, referred to above, created by the results of the illuminating power's work concerns the other side, the "something" or "being" side, of our most basic concepts.

Being is logically included in all our primary concepts, and therefore in all the concepts later developed on their basis, somewhat in the way generic concepts are included in their inferiors. Red logically includes color, which logically includes quality-of-an-extended-surface, which logically includes quality, which logically includes something-existing-in-another, which logically includes something-existing, being (and not only something existing but something existing-in-another, that is, in another something-existing, substance). Of course, the logical relation of being to its inferiors is parageneric abstraction rather than generic, and so the logical inclusion is parageneric rather than generic (see the last chapter of Causal Realism and the brief document,"How Simon Trumps Cajetan on Analogy,"a the website Resources for Modern Aristotelians, www.aristotelian.info).

On the being (the ontological) side, our most basic objective concepts from which all others derive are parageneric. So while on the sensible side (the empirical or "empiriological"

side) basic concepts are afflicted by an apparently incorrigible vagueness, basic concepts on the "being"side are really afflicted by an incorrigible ambiguity whose deleterious effects are controllable but only with great difficulty. And where the vagueness of sensible basic concepts is necessitated by the continuous character of mixed perfections as caused by matter, the ambiguity of ontological basic concepts is necessitated by the fact that pure perfections do not depend on that which is the cause of univocal individuation, prime matter.

Where a similar value is possessed by two instances, we can express their similarity in this respect only by affirming the same objective concept of them. Likewise, when to instances are not similar with respect to an intelligible value, we can express that dissimilarity only by predicating and denying, respectively, the same objective concept of them. The identical intelligible content can asserted univocally of more than one instances because the principle of individuation, the ultimate source of the diversity of these individuals, has no intelligible content of its own. But where the multiplication of the similar value among diverse instances is not caused by a potency that is a pure potency, the value we affirm of both to express their similarity must be among the values we can affirm of one and deny of the other to express their dissimilarity; if not, the similarity would be univocal and the multiplication result from a cause with no intelligible content of its own. In both cases, the similar values are material (transcendental) relations to the principles by residing in which they will be diversified. In one case, the term of that relation has no content that can make instances less than univocally similar. In the other case, the terms of those relations have diverse contents that prevent the different instances from being univocally similar, since each instance IS a material relation to a different intelligible value.

So the foundations of human knowledge appear to be afflicted with an incorrigible

vagueness at one end and an incorrigible ambiguity at the other. If so, why are we so successful at acquiring empirical knowledge at both the common sense and scientific levels. For one thing, vagueness at specific the level of the relation of red to all possible shades of red does not imply vagueness at the level of more abstract objective concepts like color. And we use concepts of physical attributes constructed with the help of mathematical concepts to replace vagueness with precision. At some time, for example, ancient Egyptians had done enough geometry to make the location of boundaries a sufficiently precise matter of empirical knowledge to determine property rights after the Nile flooded. Geometry studies figures in a way that succeeds in abstracting from the potentially infinite variability of per se sensible continuous values. And numbers can not only be defined apart from sensible matter; they can exist apart from the realm of the continuous. If Aristotle and his tradition appear to say the contrary, we may be misunderstanding the basis of their statements about the relation between number and the division of the material continuum. Psychologically and in the order of discovery, our grasp of numbers depends of the division of the continuum, for example, on the presence of spatially distinct fingers on our hands. But the truth of arithmetic's statements does not depend on the causality of matter. The number of persons in the Trinity is one less than the number of relations since that 4 -3 = 1 is just as true in the immaterial realm as the material.

The most important reason, however, for our success in overcoming the effects of vagueness on the empirical side of our most basic concepts is that there are epistemically necessary causal truths, whose objective concepts are ontological rather than empirical, that serve as regulatory principles for constructing both advanced empirical concepts and propositions that express verifiable causal connections between variations in sensibly experienced objects (see Chapter 8 of Causal Realism). The way ontological concepts are

afflicted with ambiguity does not at all affect their use for regulating the study of the connatural objects of our intellects, physical, and hence sensible, natures. When we study ontological values and causal connections for their own sake, however, we are no longer restricting their use to our connatural objects, since they can exist apart from matter. In other words, the philosophical study of the regulatory foundations of empirical knowledge is not connatural to the human intellect. And that is where the effects of the ambiguity afflicting ontological objective concepts come into play. We succeed in employing ontological necessity to overcome empirical vagueness. But human beings have only rarely overcome parageneric, ontological ambiguity when doing philosophy, including the philosophical study of empirical knowledge. Even thinkers trained in the Aristotelian tradition too often become victims of the parageneric ambiguity of the ontological, as the history of modern Aristotelian philosophy in the 20th century sadly illustrates.

Appendix D: Self-Consciousness

(A note for those aristotelians who are so brilliant that they can deal with questions of historical interpretation at the same time that they confront the most difficult questions for human beings to answer, philosophical questions: In ST, Aquinas seems to espouse the dual-act view of self-consciousness, but in DV I, 9 he rejects it at least for two cases that are crucial since they are the acts that initiate and terminate the process of human knowledge. DV says that in the SAME act of judgment by which the intellect knows truths about external things, it is also aware of itself; and DV says that the senses know that they sense without knowing the nature of their acts. In other words, by the act of sensing we know that sensing itself exists without acquiring the further knowledge of what sensing is that the intellect has of what intellection is when it judges truth. Hopefully for Aquinas, DV expresses his final view since PHILOSOPHICAL as

opposed to historical considerations rule out the view that distinct acts, direct and reflexive, are necessary for self-consciousness.)

Later dual act self-consciousness must grow out of and depend on, because it must take place within, a prior self-consciousness that does not require a second act of the subject but is a subjective, background awareness of the existence of the knowing agent through and by means of the same act by which we are objectively aware of something other than the knowing agent. This issue is settled by the profound question Maritain apparently got from Gardeil (Degrees of Knowledge, p. 446 of the Phelan ed.): How does the soul by means of a "reflexive" act of knowledge know that the direct act, which is the object of the reflexive act, is the soul's OWN act? What is it that tells the conscious subject that knows herself to be performing the "reflexive" act that she is the same subject that is performing the "reflected on" act, since these are distinct acts? If the objects of our primary, direct acts of awareness are known to be other than the conscious subject of those acts (and note that we can identify them as "other than the conscious subject" only when we are already aware, not just of something red or moving, etc. but of something else, the conscious subject, which we can identify other than as being red or moving, namely, as performing the act of sensing something red or moving), why isn't the conscious object of our secondary, "reflexive" acts known to be other than the conscious subject that produces them?

Secondary act self-consciousness must take place within, and develop in conscious causal dependence on, a prior background awareness of the existence of the conscious subject that does not involve a second conscious act distinct from the act that first makes us a conscious subject by giving us a foreground awareness of the external environment. If not, when we produce explicit "self"-consciousness through secondary acts that are distinct from the primary acts they

objectify, how would we know that the conscious subject we are now aware of in the foreground as performing primary act A is our self, the subject we are now aware of in the background as performing distinct secondary act B? (The "background" and "foreground" metaphor can be ambiguous in this context. To use vision as the example, I intend the total visible environment external to the location where sight is taking place to be the "foreground" of our visual act; I intend the existence of the act itself and of the subject as producing the act to be the "background." And when we perform an explicit secondary act of reflexive awareness, I want to avoid the opposite metaphor of saying that the sensing agent is now in the foreground while the external environment is in the background. The sensing agent and its act, including the sense act's object, the environment as sensed, are the foreground of the secondary, reflexive awareness, since the latter is objective awareness of the agent sensing the environment precisely as, precisely under the aspect of, precisely identified as, the agent sensing the environment. In the background of that explicitly reflexive objective awareness is a subjective awareness of the conscious subject as the agent producing explicitly reflexive, secondary act B, which act puts the agent as producing primary act A in the foreground of awareness.)

The problem is the identity of the act-producer in the foreground of any reflexive act (the producer of primary act A) with the act-producer that is in the background of the reflexive act (the producer of secondary act B), the identity of the producer of the prior cognitive act with the producer of the act that knows the prior cognitive act. How is the conscious subject present in the background aware that it is the same subject that is present in the foreground? After all, the subject in the foreground is present under the identity of producer-of-act-A, but the subject in the background is present under the identity of producer-of-(different)-act-B. Why couldn't the "primary" awareness we know by means of our "secondary" awareness be someone else's

awareness?

Could we answer by defining "myself" as the foreground object we are aware of by means of a secondary cognitive act B when act B makes us aware of something producing any prior primary cognitive act A? That would make dual act self-consciousness the only way of being aware of our "own" existence at the price of solipsism. You alone could use words like "I" and "myself." By definition "I" (that is, you) would be that entity which is the only thing of which you can be aware, as a foreground object, that it produces a cognitive act.

In fact there are different ways for a knowing agent to be aware of herself as a producer of an act of cognition, an objective way and a subjective way. A cognitive agent is always aware of herself and her production of acts of cognition subjectively, that is, always aware of her own existence in the background of and by means of her active state of being aware of something else, an object in the foreground. The preceding sentence applies to the subject producing both primary and reflexive cognitive acts. That is, the "something else" in the foreground can be a prior, already existing cognitive act A along with the agent herself as producing prior act A. Knowledge starts with the object of primary, direct act A, not act A itself or its subject, present in the foreground, present objectively. But always present to that knowledge subjectively and in the background is the primary, direct act itself as an act produced by an agent, and so the existence of the knowing subject as the producer of act A. We can then perform an explicitly reflexive act B on our direct act A and put what was formerly in the background in the foreground. (Contrast the way we are aware of the existence of the sensory world with the way we are aware of ourselves as sensing that world. We are aware of the world by being aware of a sensory quality as the way an external agent is acting on us. We are aware of ourselves as sensing by being aware of sensing as an act of which we are the agent. We are on different sides

of the causal relations by which sensation makes us aware of the real existence of these agents.)

When we produce reflexive act B, we re-present in the foreground objectively what was originally in the background subjectively. When we re-present it, however, the original background awareness of ourselves as the producer of our cognitive acts still exists. By hypothesis, reflected-on act A still exists. If not, we wouldn't be reflecting on it; at most we would be remembering it. So when a knower has a subjective and background awareness of herself as producing a reflexive act, she still has a subjective and background awareness of herself as producing the reflected-on act. Although she is now also aware of herself objectively as producing reflected-on act A, her background awareness of herself as producing act A does not cease to exist. But she now also has a subjective, background awareness of the producer of both acts. By the same kind of subjective, background awareness, she is still aware of the producer of primary act A as the producer of the primary act and now also aware of the producer of secondary act B as the producer of the secondary act.

The original background awareness continues to exist at the same time that the subject, in one and the same secondary act, both makes what was originally present in the background now additionally present in the foreground and also makes herself newly present in the background as the producer of the secondary act. Because she is still performing the reflected-on act, and so still possesses the subjective, background knowledge of herself as producing the reflected-on act, she knows that the producer of the reflected-on act that has now become objectively present in the foreground is the same as the producer of the reflexive act.

To say that something is present in a subjective way is to say that the producer of an act is present to herself as producer of the act by and in the same act that she produces. The producer is present in a subjective way BECAUSE and only because she is producer of an act by which

something is present in an objective way. And the kind of knowledge that the producer of the first act has of herself because and only because it is producer of that act is the same kind of knowledge that the producer of the second act has of herself, namely, knowledge of herself because and only because it is producer of the second act. So the producer of act B simultaneously knows the existence of the producer of act A, since act A remains in existence. But the producer of each act simultaneously knows of the existence of the producer of each act by the kind of knowledge that can be had because and only because she is producer of each act: subjective, background knowledge of herself as the producer of each act. And because the way she knows each existent is subjective, the producer of act B simultaneously knows that the awareness she has of each producer is the kind of awareness that can only be possessed by the producer of the act itself. So the producer of act B simultaneously knows subjectively and in the background that she is the producer of both act A and of act B.

The producer of each act's original knowledge of herself as the producer of each act is subjective, background knowledge. By that knowledge the producer of acts A and B knows that the reason she is aware of herself as the producer of acts A and B is precisely and only that she is the producer of acts A and B. So before she produces act B, she already knows that the knowledge she possesses of the producer of act A is a kind of knowledge that can be possessed because and only because she is the producer of act A; and in producing act B she knows that the knowledge she possesses of the existence of producer of act B is the kind of knowledge of that existence that only the producer of act B can have. So she knows that she is the producer of both act A and act B.

By producing act A, she is subjectively present to itself under the identity, producer of act A; and by producing act B, she is subjectively present to itself under a different identity,

producer of act B. But because of the way each of these awarenesses is caused, namely, subjectively, the producer of each act cannot not be aware that she is the same agent. Each formal "object" of these distinct subjective awarenesses is: a-producer-of-act-X-known-in-such-a-way-that-the-knower-is-aware-that-she-is-that-producer. Therefore the producer must be simultaneously aware that the producer of one act is the same material "object" as the producer of the second act, aware that these formal objects are the same material object, aware that these diverse "objectifications" are objectifications of the same thing.

By act B, however, she also has an objective awareness that the producer of act A is the kind of thing that has a subjective awareness of itself as the producer of act A. So she knows that the entity whose existence act A makes her subjectively aware of as the producer of act A is the same entity that act B makes her objectively aware of as the producer of act A. And since she has a subjective awareness of herself as the producer of both acts A and B, she knows that the entity that act B makes her objectively aware of as producing act A is the same entity she is subjectively aware of an producing act B. What we objectify in the foreground of act B is the fact that the producer of act A was (and still is) subjectively present in the background of act A, that the existence of that producer of act A as that producer is subjectively known in the background of act A. What act B objectifies is that the foreground agent now present as the producer of act A is the same as the conscious subject still present in the background of act A as its producer and so the same as the conscious subject now subjectively present in the background of act B. For as subjective, the awareness both subjects have as producers of these acts is known to be the kind of knowledge that can only be possessed by the producers of those acts because and only because they are the producers of those acts.

But the relation between her subjective awarenesses of herself as the agent of both act A

and act B is not just temporal co-existence; the reason there is temporal co-existence between them is that there is causal dependence between them. Since act A remains in existence when act B reflects on act A, the producer of act B knows that she would not be subjectively aware of herself as the producer of act B if she were not the same thing whose existence she continues to have subjective awareness of as the producer of act A; for she knows she would not be producing act B if act A did not exist to provide an object for act B, and she has a subjective awareness of herself as the producer of act A. So if a subject possesses both background awarenesses, she cannot not know that act B takes place within, and in conscious causal dependence on, a prior self-consciousness that does not require a second act distinct from the act that first makes her a conscious subject by giving her a foreground awareness of the external environment.

So we know that the way that the subject is still present in the background of act A, which mode of presence we now also know objectively by act B, is the same as the way the subject is now present subjectively in the background of act B — or conversely, we know that the way that the subject is newly present in the background of act B as the producer of act B is the same way it is present in the background of act A — except for one thing: We know that the secondary subjective presence is causally dependent on the primary, because we are aware that act B is causally dependent on act A.

In order to recognize acts A and B as direct and reflexive acts, respectively, the subject present in the background of each act must be able to recognize itself simultaneously as the producer of both acts; the subject present in the background of the secondary act as the producer of the secondary act must be aware of itself as the subject that is also present in the background of the primary act as the producer of the primary act. So the subject cannot not know that the

objective awareness that constitutes the secondary act, the awareness that puts the primary act's causing by its subject in the foreground, is causally just a development of, an outgrowth from, an expansion of the same subject's original background awareness of her causing of the primary act. The secondary awareness must be just a re-focusing of the primary awareness, a re-focusing that is a conscious converting of what was originally in the background to the foreground while the original background awareness continues to exist. When we reflect, we must be conscious that we are just producing an explicit awareness from what was, and still is, an implicit awareness. We cannot not be conscious of the secondary act as a re-presentation of what continues to be present in the original way.

Evidence that we are conscious of it as a re-presentation of what continues to be present in the original way is provided by the very fact that we call the secondary act "reflexive." Our calling it that is an effect of our knowing that the secondary act, in contrast to the primary, is a turning back on something present in the primary; for in order for us to know that the second act turns back on the primary, the primary background awareness must continue to exist. Further evidence is just the fact that we do recognize an essential connection between the subject in the foreground of the second act and the subject in the background. We could not do that if the awareness of a cognitive agent in the object of the second act were not just a development of, an outgrowth from, the awareness possessed by the cognitive agent in the background of the primary act. The causal production of the reflexive act, and so the existence of the agent of the reflexive act, are in the background of the reflexive act, but the causal production that is in the foreground of the reflexive act is present there as a development of a causal relation that is still present in the background of the direct act. So the causal relation in the background of act B is present there as an outgrowth from a causal relation that is still in the background knowledge of

the producer of act A.

In other words, we do not get an entirely new background awareness of ourselves every time we produce a reflex awareness of ourselves. That is not the way self-consciousness works. Now that the reflexive act exists, we can newly identify the background agent as the producer of the reflexive act, not just as the producer of the primary act. But we could not identify the new act (act B) as "reflexive" if act B did not make us aware that the producer of act A, which act B makes present in an objective way, is the same as the producer of act A that is still present in a subjective way. To do that, act B must be a conscious development of the producer of act A's causal awareness of herself as the producer of act A.

Appendix E: Memory as Self-consciousness

From the beginning of sensory consciousness, we are subjectively aware of our existence as being temporally continuous. Immediately after I have begun to read a sentence or listen to a melody my sensing of the first word or note no longer exists, but the sentence or melody only makes sense to me as a whole, as a relation between all the parts. The consciousness of that whole is made up of parts that no longer exist, since the only thing that exists of time, the instant, is not a part of time. So a kind of memory is operating from the first instant of sensation. That means a kind of consciousness of the past as having really existed, as opposed to an imaginary consciousness of objects, which could be the same as remembered objects in all respects other than as having really existed, begins operating from the first instant of sensation.

When we later imagine and remember objects, therefore, we have a standard of comparison by which to distinguish between a kind of awareness of objects that claims no essential connection to the existence of those objects and a kind awareness that claims to have an essential connection with what has really existed. The characteristic of a later state of

remembering that allows us to distinguish it from a later state of imagining probably has something to do with a similarity between the way later memory and immediate memory work as modes of awareness, a similarity not shared by the way imagination works.

When we are sensing, immediate memory presents objects as having actually acted on the conscious subject by action that both really exists at this instant and is a continuation of action that really existed immediately before. And since self-consciousness begins in sensation, immediate memory must include awareness of the sensing agent in a subjective and background way (not by objectifying the agent as reflexive acts do); otherwise, we would only be aware of ourselves as existing in the instantaneous present, not as having had an immediate past.

As subjective, the background way we are present in immediate memory is self-evidently a kind of awareness that can only be possessed by the producer of the act of sensing. It is a kind of awareness of the immediately past act of awareness that could only be had by the immediately past subject of that awareness. But as an immediate memory of a sense act and its producer this subjective awareness is of a kind that could only be possessed by an agent whose immediately past action was done under the influence of external action, since that immediately past action was awareness of external action as such. In the immediate memory of sensation our awareness of ourselves as producers of sensation in the order of exercise includes awareness that we have been doing so under the influence of action immediately remembered as action, an influence immediately remembered as received from the really existing environment.

Later memory must resemble the latter characteristic of immediate memory (as including, or at least appearing to include, a subjective, background awareness of acting in response to an external influence) in a way that imagination does not. An apparent memory of a no longer sensed object includes an apparent subjective awareness of the same agent now

producing memory act M as having formerly had a subjective awareness of itself as the producer of past sense act P, because it has an apparent awareness of itself as having produced act P under the influence of the then really existing environment. So the apparent memory includes the apparent past awareness, by the same agent that is currently conscious, of the action of the environment on it as action, and therefore the apparent past awareness of the same agent as having undergone action from the environment. That similarity between our immediate memory and act M, an apparent memory of the non-immediate past, makes it appear that the agent that currently has a subjective awareness of itself as producer of act M formerly had a subjective awareness of itself as producer of past sensory act P, the kind of awareness of itself that can only be had by the producer of act P. This is what gives the object of a later memory, the remembered event, the appearance of having really existed. In contrast, imagination's presentation of objects as merely *disposed* to act on the senses does not present those dispositions as in any way connected with the actual existence of that action.

That is how memory differs from imagination in claiming to be awareness of the actual past existence of its foreground object, an allegedly remembered event. Neither remembering nor imagining presents its foreground object as now acting on us, but remembering presents its background subject as previously having been aware of the memory's current foreground object by having been aware of the action of that object as action. The current conscious subject is aware of itself as producing an act of remembering rather than imagining, because the current subjective awareness of itself as producing an act of remembering includes an apparent subjective awareness of itself as having undergone the action of the remembered object (or is also an apparent subjective awareness of itself as having undergone the action of the remembered object even though it is not subjectively aware of itself as now undergoing that

action, or also includes an apparent awareness of itself as identical with a past conscious subject that underwent that action).

We can also imagine what it is for a subject of sensation to undergo the influence of the environment, but imagining is a mode of presentation that does not claim an essential connection between the subject in the foreground of the imagining and anything that really exists or existed. If the subject in the foreground happens to be a real existent, as when we imagine something happening to ourselves, the real existence of that subject is per accidens as far as the nature of imagining as a mode of consciousness is concerned. The opposite is true of memory as a mode of consciousness. Remembering must present a past background subject as identical with the now existing background subject.

Whether or not a memory is genuine, a person must have a subjective awareness of herself as producing an act that is an apparent memory, as she has of herself as producing all her cognitive acts. But when she is genuinely remembering, she is aware of objects that are not now acting on her cognitive powers and simultaneously aware of the conscious subject (herself) as having performed a prior cognitive act as a result of undergoing the action of those objects. Remembering is not a reflexive act; it does not convert what was originally in the background to the foreground. In addition to being a re-presentation of an originally sensed foreground object, memory is a re-presentation of the past background awareness of the sensory subject precisely as a background awareness of the subject producing an act of sensation under the causal influence of the foreground object. Like reflexive acts, however, remembering presents the subject of the past act of sensation as if it is identical with the subject in the background of current cognitive act M.

So like a reflexive act, act M presents itself as a causal outgrowth from the same

temporal continuum of subjective knowledge on which the agent of act P apparently existed; for it is by that kind of causal connection that reflexive act R shows the identity between the agent known objectively by act R and the agent still in the background of the current act of sensation that is being reflected on (see Appendix D). The awareness of the producer of P by act M appears to be subjective, background knowledge; in this the memory of ourselves as past sensory agents differs from reflexive awareness of ourselves as current sensory agents, which is objective. But act M does present the agent of act P as identical with the agent that now has a background knowledge of itself as producer of act M, by presenting act P as caused by an agent subjectively aware of itself on the same temporal continuum of subjective knowledge that agent M is currently on.

The similarity of memory with the way sensation presents immediately past external action on the immediately past subject of sensation, and the corresponding dissimilarity between imagination and sensation, is perceivable because sensation still exists when we are remembering and imagining. Normally when imagining, we continue to have an awareness of ourselves (an awareness including an immediate memory of the past) as sensing and so as currently undergoing really existing action. But there is no similarity between the kind of self-awareness the imaginer has of himself as imaginer and the senser has of himself as sensing with respect to any connection with the existence of the imagined object, because there is no similarity between the ways imagination and sensation present objects with respect to sensation's awareness of the environment as acting on us.

But there is such a similarity between the way an apparent memory presents an object and sensation presents an object. When imagining, we have a subjective awareness of ourselves as producing both act of imagination I and current act of sensation S. In memory we have a third

kind of self-awareness: not just of the producer of current act M being the same as the producer of act S, but of the producer of M as being the same as the producer of past sensory act P, an act apparently produced under the influence of external action known as such. We are subjectively aware of the producer of act M as being the same producer that act M appears to make us aware of as having produced act P. This is an awareness of having had, in the non-immediate past, the same kind of subjective self-awareness that we now continue to have on the sensory level. Act M gives its producer the kind of awareness of the producer of act P that only the producer of act P can have, and act M gives the agent of M an awareness of the agent of P as having undergone past really existing action from the environment.

That is how an apparent memory succeeds in making a claim (I do not say succeeds in making an accurate claim) of identity between the past and present background subjects. Act M makes the claim that its current foreground object, the allegedly remembered event, was an actual event by giving the appearance of identity between the present background subject of M and a past background subject aware of itself as undergoing action from the event. Because the claim is made by the appearance of past causal action by the object of memory on the currently existing subject of memory, the claim is a suitable target for inductive causal reasoning. Is my current perception of myself as a subject belonging to the same temporal subjective continuum as the subject of apparent past sensory act P accurate? Induction, which is always based on causal principles, can allow us to know that it is unreasonable to believe the opposite. Induction establishes that an apparent memory is genuine by establishing that it is not reasonable to believe the opposite of "In the past, I was aware of this object (the object of act M) because I sensed it (was aware of its action as action)."

Appendix F: Is Action's Relation to the Agent Material or Formal?

Is the relation by which a change is dependent on an agent a material (transcendental) relation; that is, is the change identical with its way of being related to an agent? Or is the relation something the change has; that is, an accident distinct from the change itself, a formal (in this case, predicamental) relation? If the latter, then strictly speaking sensation's object is a change with its relation of dependence on the environment. But why could we not say that the object of sensation was just the relation of dependence itself, not the relation PLUS the change?

The color blind person cannot sense whether the environment is reflecting red light or orange light, but her sense of sight makes her aware of the environment's real existence as the agent really acting on her sense organs. So the objects of the color-blind and color-seeing's vision are the same insofar as both aware of action as action. They differ because action is received according to the mode of the receiver. But that is a "real" difference; since the color blind person really does not receive the action the way the color seeing person does. Since we can say of both the color blind and the color seeing that they are aware of the action of the environment as action, their objects are the same in that respect, and we must find some other reality that accounts for the real difference between their objects. So we must say that the object of their vision is not the relation of dependence on the environment alone but the change received by the sense organ together with its relation of dependence.

Might the change caused by the environment be a material relation of dependence identical with the change itself? Yes, in fact whenever there is a NECESSARY connection between distinct things (here the action and its efficient cause) at least one of the things would not be what it is without that connection. So if the connection is something distinct from what would not be what it is without the connection, what that thing is must be identical with its relation to that connection (see Causal Realism, Chapter 9). Here the "connection" the change

would not be what it is without would be a formal relation of dependence distinct from the change that the change (or the sensory organ) possesses. But since the change's relation of dependence on an efficient cause is necessary, the change itself would have to be identical with a relation of requiring-that-connection; the change itself would have to be a material relation of requiring-that-formal-relation distinct from itself.

This means that change is a material relation of dependence even if it also has a formal relation of dependence; for the necessity of its having an efficient cause would require that it be a material relation to the formal relation. But if the change is a material relation of dependence on an efficient cause even under the assumption that it has a distinct formal relation of dependence, why not suppress the hypothesis of a distinct formal relation altogether? Then, only when a thing is a material relation of potentiality for a CONTINGENT relation of some kind would that contingent relation be a formal relation. It might be possible to suppress the distinct formal relation, but I do not want to make anything I say here about sensation turn on that possibility. Of course, if the change received by the sensory organs is distinct from its relation of dependence, the specification of sensation by its object would require two forms, the change and its relation of dependence. That might seem awkward, but the functioning of these forms in the specification would be causally coordinated by the very nature of the forms. And the distinction between sensed, imagined and remembered objects would be explained even more easily than I do in Appendix B (where the explanation did not have to specify whether the relation is formal or material), if only one of the two sensory forms contributed to the specification for imagining the object, while both contributed to the specification for memory.

A change that is identical with a (material) relation of dependence on an efficient cause is also identical with a (material) relation of dependence on a component cause ("component

cause" just means "material cause"; see Causal Realism, Chapter 7; but using "material" in these two different senses here would just be confusing). But there is nothing paradoxical about this; for the change is identical with something that relates differently to really distinct terms, since the efficient cause and component cause must be really distinct. So whatever is a material relation of dependence on an efficient cause must be identical with a material relation of dependence on a component cause, and vice versa. That the change is identical with both material relations, or that each material relation of dependence is identical with the other, just reflects the fact that that whatever is a necessary (and hence material) relation of dependence on an efficient cause must also be a different kind of necessary relation on a really distinct kind of cause, a component cause. (The same curve must be identical, from different points of view, with a concave and a convex curve; the same road must be the road from north to south and from south to north.)

If God's essence can be identical with formal relations to really distinct terms, even though each of the formal relations is identical with the divine essence, a change can a fortiori be identical with material relations to really distinct terms that are not identical with the change. God's essence *can* be considered identical with a material relation to all possible, and actual, things other than himself. But the Trinitarian relations must be formal relations, since they are distinct from one another. And they must be ways in which the divine relates to itself not to creatures, since God's relations with creatures cannot be formal relations.

Appendix G: Some Random Thoughts on Sensation

Simon says sensation is both transitive and immanent action. Can we say it is transitive action in the order of specification and immanent action in the order of exercise? But sensation's exercise depends on transitive action, because it's exercise depends on the presence of its object,

which object is transitive action.

.....

In ordinary instrumental causality, the principal cause produces a change in the instrument. The change that the instrument undergoes because of the principal cause allows the power of the agent to exist intentionally in the instrument. In sensation, the principal agent, the sense faculty, relies on a change that a different agent causes in the sense organ.

.....

Some more vocabulary of action (see Causal Realism) used to describe sensation or the contrast between sensation and imagination: there are "weak" sensations (Simon uses the phrase in his essay on sensation) and "faint" sensations. Likewise, images are "weaker" or "fainter" than sensations are.

.....

Putnam's problem of how we know we are not just a brain floating in a tank: It makes no sense to look outside of sense knowledge for evidence that can only be found within sense knowledge. (This is a reductio ad absurdum of the view — Knasas's view and possibly Gilson and Owens's — that one cannot justify sense knowledge by reductio ad absurdum.) Therefore it is not only irrational to believe that we are in tank, it is not possible for it to be rational to believe that we are in tank. The only possible evidence for such a believe would be evidence that would circumvent the tank and thus contradict its own hypothesis.

Appendix H: Random Thoughts on Sensing for What They're Worth

The following thoughts are offered strictly for what they're worth. I neither endorse them or reject them:

.....

This is the lowest form of cognition because the form through which it occurs is the same (thing) as the object, i.e., is also the object. (This also true of self-reflection, the other kind of consciousness that gives us an actual existent directly and as such.) (The identity of specifier and object is a better formula than Simon's identity of immanent action and transitive action. There is an immanent action distinct from a transitive action, but not a specifier distinct from an object. On the other hand, in the immanent act the same transitive act exists again intentionally. Or, the immanent action is an intentional existence of the transitive action itself.)

.....

How are we aware in sensation of red as action? The awareness of action as such is in the act of sensation, rather than the object. Perhaps it is in the self-awareness of ourselves undergoing an act; an awareness we have that is consubstantial with the awareness of the object and awareness of ourselves as aware of the object, that we are aware of action as action.

Does this mean that there is a very minimal but essential reflection on the self at the level of sensation? Why not? That would be the first kind of consciousness (Leibniz's *petites conceptiones?)*, a chimp's kind would be next, and so on.

.....

In memory, I not only have the recalled awareness of the object but the recalled awareness of myself as sensing the object. I can also recall myself imagining an object. But recalling myself as imagining or sensing are two different kinds of recollection; for the kind of awareness of self caused by sensation differs from the awareness of self caused by imagination. So likewise the recollection of the self-awarenesses differs. In memory, the awareness of self that I recall is still derived from the action of the object, but at one remove.

(Both recollection of self, as imagining or as sensing, can be wrong; but what is new

about that?)

.....

Do animals other than chimps lack self-consciousness because they do not recognize themselves in mirrors? No, self-consciousness exists at the most basic level, the sense of touch. So dogs and cats are aware of their own existence. But when they look in a mirror they do not associate what they are aware of by sight with one of the things they are aware of by touch, or with the self-awareness that any act of sight gives them. When the ability to associate those two things emerges, it is not the emergence of self-consciousness as something radically knew. It is just one step in the development of what was there all along.

(So all that it takes to get self-consciousness of the kind chimps show when they look at a mirror is the scholastic's good old faculty of the COMMON SENSE, which unites the objects of the other faculties, here, sight and touch?)

.....

How does the physical action cause the faculty to give the physical action an immaterial, intentional existence? Perhaps this way. The physical action causes the faculty to go from potency to act with respect to being aware of itself undergoing the action.

When an animal's body undergoes action passively, the animal soul must undergo it also. Certain of the body’s organs are used by the soul for its sense powers. The soul is aware of its own existence as that which, by being part of the body, undergoes this action passively. A thing is knowable in so far as actual. Sometimes the soul knows itself through its own action. Here, it knows itself through an actuality that is not its own action. Still the soul is put in act by this action. Therefore it can know itself as so put in act. Its knowledge of itself is an action. But the act undergone which makes it eligible to be known is not that action.

But can we say this self-consciousness is what sensation consists of? Perhaps. Perhaps sensation is a knowing of our self as undergoing an action. And so it would be an awareness of action as action. Still where does intentional existence come in?

.....

Through the sensory power the soul becomes directly aware of its own existence; so it is not by reflecting on an act of the sense power that it knows itself through its own actuality. In other words, the double act model of self-awareness does not apply. It is precisely the act of the sense power to make the soul aware of itself as undergoing a passion, and hence to make us aware of action has action.

If I do not receive an immaterial or intentional form from the action of the sensed object, sensation must be explained by the nature of the receiver not of the received. What nature must the receiver have to accomplish this? Awareness of action as action would be by its identity with itself also awareness of subject of sensation as undergoing action.

Can we say that awareness that a change undergone by the sense organ is a passion relative to me is the same as awareness that it is an action relative to something other than me?

The senses are aware of themselves as going from potency to act. They are in potency relative to union with an object. What makes sensation different is that the object they are united with is nothing but their going from potency to act relative to union with the object; that is, they are intentionally united with their going physically from potency to act as the environment acts on them physically. This action moves them from potency to act with respect to performing the immanent act of being intentionally united with the action that actualizes them physically.

.....

Maybe this is how to reply to Haldane on "the language of thought". Sensation does not

need a formal sign because it does not need a sign. A sign makes something other than itself present to knowing power. In sensation, the action received in the faculty is the impressed form and is also the object; so the object is not something other than the form by which the object is cognized. The senses are aware of it as action because sense cognition takes place in dependence on the action and merely elevates the action to the status of object.

Because the sense faculties do not produce their own form through which they become aware of the object, they grasp the object as action on them. In other words, its status as object depends by way of efficient causality on itself; therefore it is grasped, it is objectified, as an action on the senses. on us.

.....

What makes something an instrumental sign? Awareness of what some noise or shape is by means of formal signs.

.....

How to ask a machine: Are you conscious? Don't ask it if it is self-conscious. Ask about the contents of self-consciousness, that is, the prior consciousness of the other that self-consciousness is consciousness of:

Are you related to, do you have a relation to ... To the word "triangle"? Yes. To that for which the word "triangle" is used? Here one answer might be "Yes, I have a relation to that triangle, and that triangle, and that triangle, ad infinitum" (Wittgenstein on the series). Since it can't be related to an actual infinity of triangles, can we replace the reference to the members of the set by a reference to a formula the covers each member, the formula for a triangle? Yes, but then we have to ask the same questions about each sign in the formula.

Can I ask it "But do you have the kind of relation to that for which "triangle" is used that

my Poinsot article shows to be a necessary cause of the behavior of using "triangle" meaningfully?" "Yes, I am related to that, that, that, etc. and each of them instantiates that for which ‘triangle’ is used." But do you have a relation to that for which ‘triangle’ is used such that what individuates that, and that, and that is not included? "Well, I've got a relation to a math formula that applies to all triangles." But do you have a relation to each term in the formula such that you are related to that for which the term is used without including what differentiates this and that? (Mother’s death example relevant here, i.e., relevant to Turing, and so is the genitalia example.)

.....

In sensing, the substantial form possesses the action of the environment as its own state of act, that is, the substantial form becomes this prior state of act intentionally, intentionally becomes the action as action.

And given the nature of that formal causality as a transitive action, the object specified for the intentional act is the physical act known as action.

.....

We sometimes say that the difference between sensation and intellection is that the sense faculty uses the body as an instrument. What is the cash value of saying this however? The sense faculty uses the body in place of the concept. That is, it uses the body, as having been actualized by the transitive action of the environment, as the means by which the intentional act that has the prior transitive action as its object comes about. Like the concept, the body so used is that by means of which knowledge takes place, not that which is known.

The kind of activity that the rational soul has on its own and that therefore makes the rational soul subsistent is immaterial activity in which the body does not have a part.

.....

The question of where intentionality comes from in sensation, if not from a distinct kind of intentional form, will be discussed below.

There will be an objection based on the quotation from Cajetan Simon cites about forms being received immaterially. Is that quotation a comment on a text from Aristotle or from Aquinas? Especially if it is from Aquinas, I will be accused of not saving whatever it is that Aquinas is trying to say by it. But when he says that X, a form, is received immaterially, is he talking about X's status as an object of awareness (the object is the whole thing or nature, but the whole thing or nature includes what Aquinas calls the form of the part)? That is, is he talking about X's status as part of an object of an intentional, and hence immaterial, state? Or is he talking about X as an accidental form received by the subject, the form by which the subject becomes aware of the object? Is it the objective concept (or image, or memory, or sensation) he is talking about or the psychological, formal, concept. If he means the first, that creates no problem for me. But how do we know which one he means given the ambiguity of the phrase "receiving forms" in Aquinas's whole discussion of knowledge?