

HYLOMORPHISM AND OUR KNOWLEDGE OF VALUE

ROBERT C. KOONS

1. Introduction

Both Aristotle and Thomas Aquinas subscribe to a Formal Identity theory about the relation between the human mind and the extra-mental objects of our understanding. This has been one of the most controversial features of Aristotelian and Thomistic metaphysics of the mind. I offer here a defense of the Formal Identity Thesis and of the immateriality of the human intellect, based on specifically epistemological arguments about our knowledge of necessary or essential truths, including especially essential truths about value.

Rather than speaking in terms of *a priori* vs. *a posteriori*, I will speak of knowledge of necessity (*de necessario*) and knowledge of contingency (*de contingente*). The epistemological problem I will focus on concerns what I call the Veil of Contingency. There is a gap between the set of contingent truths (available in sense perception, memory, and testimony) and the set of necessary truths. The contingent truths about the actual world underdetermine the necessary truths, including necessary truths of mathematics, science, and ethics.

For Aristotelians, the class of necessary truths and the class of truths that are somehow grounded by essences are identical. All necessary truths are essential truths or grounded in essential truths, and all essential truths and all truths grounded in essence are necessary. For similar reasons, the necessary and the “universal” are coterminous. What is universal is necessary, and what is necessary is universal. Merely accidental generalizations do not count as ‘universal’ in the relevant sense.

For Aristotelians, it is abstraction by the active intellect that gives us access to essence, and thereby to *de necessario* knowledge. When the intellect

gains access to a form, that form is “in” the intellect. That is, each concept of an essence is a form, a form belonging to an individual mind and of the same kind as (conspecific with) forms occurring outside the mind in nature. There is a direct causal relation of some kind (I will argue, a *formal* causal connection) between these internal forms and acts of understanding and of judgment by the individual human being. Aquinas and those scholastics who follow him call these internal forms the ‘intelligible species’. According to what I am calling the Formal Identity Thesis, the intelligible species is literally conspecific with the substances or accidents in nature being understood. This thesis is explicitly and notoriously propounded by Aristotle in Book 3 of *De Anima*:

Now as to that part of the soul by which it has both cognition and understanding... it must be something unaffected which yet receives the form and is potentially of the same kind as its object but not the same particular... (Aristotle, p. 201, Book 3, chapter 4)

And indeed there is an intellect characterized by the capacity to become all things, and an intellect characterized by that to bring all things about, and to bring them about in just the way that a state, like light, does. (For in a way, light also makes things that are potentially colours colours in actuality.) (Aristotle, p. 204, Book 3, chapter 5)

I will argue in section 2 that some reification of form is necessary to ground our knowledge of objective value. Then, in section 3, I offer an Aristotelian account of our moral knowledge, in terms of the formal identity of the intellect with its object. I criticize three alternative interpretations of Thomas Aquinas’s Formal Identity Thesis in section 4.

2. Knowledge De Bono: The Need for a Connection

Knowledge of value requires knowledge of necessities. There are two compelling Aristotelian reasons why knowledge of the good must be grounded in the knowledge of specific natures.

1. Since *good* is not a genus (*Summa Contra Gentiles* I, 25, 6 and *De Veritate* 1), we grasp particular goods by understanding them as standing in analogies to one another, modes of perfection of different species. So, it is impossible to gain knowledge of the good except in relation to definite forms. If there were no knowledge of creaturely essences, there would be no knowledge of value. Aquinas

clearly states this argument in the *Summa Theologiae*, Part I, Question 5:

The essence of goodness consists in mode, species, and order.

I answer that, everything is said to be good so far as it is perfect; for in that way only is it desirable (as shown above Articles [1], 3). Now a thing is said to be perfect if it lacks nothing according to the mode of its perfection. But since everything is what it is by its form (and since the form presupposes certain things, and from the form certain things necessarily follow), in order for a thing to be perfect and good it must have a form, together with all that precedes and follows upon that form. Now the form presupposes determination or commensuration of its principles, whether material or efficient, and this is signified by the mode: hence it is said that the measure marks the mode. But the form itself is signified by the species; for everything is placed in its species by its form.... Further, upon the form follows an inclination to the end, or to an action, or something of the sort; for everything, in so far as it is in act, acts and tends towards that which is in accordance with its form; and this belongs to weight and order. Hence the essence of goodness, so far as it consists in perfection, consists also in mode, species and order. (*Summa Theologiae* Part I, Q5, a5)

2. We gain knowledge of the good (and other transcendentals, like *being*, *truth*, and *one*) by *reflection* on the primary acts of the intellect, which must be directed to specific natures (Lonergan, p. 66). For example, what Aquinas says about our understanding of truth in *De Veritate* would apply, *mutatis mutandis*, to our knowledge of the good:

And truth is known by the intellect in view of the fact that the intellect reflects upon its own act – not merely as knowing its own act, but as knowing the proportion of its act to the thing. Now, this proportion cannot be known without knowing the nature of the act; and the nature of the act cannot be known without knowing the nature of the active principle, that is, the intellect itself, to whose nature it belongs to be conformed to things. Consequently, it is because the intellect reflects upon itself that it knows truth. (*De Veritate*, Q1, A9, reply)

Being and goodness are convertible. The good is *being as desired*. A good *F* is an *F* that is perfect in its specific nature. The particular goods are analogously and not univocally related to one another. This means that there is no such thing as *a* or *the* form of the good, whether we think of such a form as a Platonic substance or as an individual form. Our knowledge of the

objective good is dependent on our knowledge of specific natural forms and of their necessary relations of analogy to one another.

How far does this principle of analogy stretch? Are there forms of the being of the categories: i.e., substantial being, quantitative being, qualitative being, etc.? Is there similarly a single form of *good substance* or *good action* or *good quality*? Is it only trans-categorical predications that count as analogical rather than univocal?

I think not. Even within a category, the ways of being are quite different; e.g., the substantial being of a stone is quite different from that of a man, or from that of an angel. Aquinas makes a distinction between the common notion of good and “particular goods” in the *Summa Theologiae* I-II, Q10, a2. As Aquinas states, “Any particular good, insofar as it is lacking some good, can be regarded as non-good.” In article 1 of that question, he makes clear that the will is directed of necessity to a general good (a transcendental) and not to any particular good, which I take to mean that there is no genus of good action or good quality. To be a good action, an action must be good in all respects: object, end, and appropriateness to circumstances, all in accordance with right reason. (*Summa Theologiae* I-II, Q18, a4)

There must be, in addition, a connection between our understanding of essences and forms, on the one hand, and our knowledge of necessary truths, on the other. Our knowledge of necessities is, with one exception, based upon our understanding of the essences involved. (The one exception is that we can infer the necessary existence of God as first cause, without grasping His essence.) Yves Simon describes this connection between essences and necessities:

Consider theoretical science. To the extent that it achieves its ideal, it moves beyond the existential data to concern itself with general types and intelligible laws, or, in other words, with formulae of possibility, with essential necessities. Unsupported by rational analysis, empirical hypotheses derived from factual observations represent an incomplete kind of knowing, indeed, a partial defeat of science. The perfection of theoretical knowledge depends above all on the necessity of its object. Thus every time we manage to abstract from experience to reach a necessary object, our understanding, though bearing now on an object separated from existence, is more perfect than our experimental knowledge, which bears on physical existence alone. (Simon, p. 86)

2.1 A Transcendental Argument

I offer here a transcendental argument for the claim that there must be some connection (either causal or metaphysical) between the appearance of value to us and the essential facts about value. The first is a transcendental argument, with an appeal to something analogous to a causal constraint on knowledge.

1. If there were no connection, causal or constitutive, between our judgments about necessity and the corresponding facts about essences, we would have no knowledge of necessity.
2. We do have such knowledge.
3. Therefore, there is some connection, causal or constitutive, between our judgments of necessity and the corresponding essential facts.

Edmund Gettier's paper (1963) revealed the bankruptcy of defining knowledge in terms of justified true belief. Post-Gettier reflections on knowledge have revealed that, at least in the paradigmatic cases of perception, memory, and testimony, knowledge requires a real connection of some kind between the mental state of knowledge and the facts so known. I argued in *Realism Regained* (Koons 2000) that a similar constraint is also required for our knowledge of the laws of nature, mathematics, and logic (see also Koons 2017 and Koons 2018). John Bengson has recently made a similar argument (Bengson 2015). The key fact is that our intuitive (justified) true beliefs can also be Gettierized.

Suppose that a drug XYZ produces randomized intellectual seemings (or, if you prefer, causes our ordinary rational faculties to generate beliefs with randomized contents). When administered to a group of subjects, it is predictable that 1% end up with true intuitive beliefs, 99% with false ones. Those relying on veridical seemings (or belief-generation) under these circumstances do not gain knowledge, although they may have justified true beliefs (assuming that they don't know about the drug and its effect).

Does this result depend in any way on contingency – that is, on the possibility of a given subject believing differently? Replace the drug with genetic manipulation of human gametes. Given origins essentialism, the 1% that end up with true beliefs might have the disposition toward those beliefs essentially. This is still not good enough for knowledge.

Would it be sufficient if the seemings or dispositions to believe were essential to one's species? I think not: just replace the preceding scenarios

with one in which aliens manipulate the evolutionary history of intelligent species on 100 planets, producing reliably true beliefs in 1, mostly false beliefs in 99, with all 100 species equally adept at reproduction. The one intelligent species with species-wide essential dispositions to true belief still lacks knowledge, because of the lack of a real connection between their seemings and dispositions and the relevant truths (whether those truths are themselves necessary or contingent).

The upshot of these thought experiments is this: knowledge is undermined so long as there are relevantly similar seemings or dispositions that are unreliable with respect to truth, and which had an equal or nearly equal propensity to exist.

What if it were metaphysically impossible for there to exist relevantly similar seemings that are false? I reply: Is this impossibility supposed to be true as a matter of brute necessity? It is hard to believe in such a metaphysical necessity without some ground – a ground that only a real connection can provide. And, in any case, a merely brute necessity is too accidental to provide the needed connection between beliefs and their objects. Counterpossible scenarios in which the brute necessity was violated would be epistemologically relevant.

2.2 Sensory Knowledge and Imagination cannot Fill the Gap

Can sensory knowledge alone provide us with the connection that is needed for this knowledge of necessity? I would argue that it cannot, since sensory knowledge can give us knowledge only of *contingent* matters of fact, and there is a Veil of Contingency lying between such matters of fact and the necessary features of the essences of the things perceived. David Hume was perhaps the first to posit such a veil explicitly, arguing that we never directly observe the “necessary connections” between matters of fact, but this deficiency of the power of sensory perception was already an implicit element in the Aristotelian and scholastic traditions. We can only perceive directly the proper sensibles of each of our five senses (i.e., colors, sounds, smells, tastes, and tactile qualities). Even when the common sense is included, our sensory knowledge is limited to the actual distribution of these qualities and quantities, which always lies on the near side of the Veil of Contingency.

It is true that the sensory imagination gives us some limited access to information about what is possible or impossible. However, it is clearly at best a fallible guide to possibility, and so not a source of real knowledge. In addition, since we are concerned here about our knowledge of value, the power of imagination by itself cannot provide us with access to the essences of natural things, like human beings. Imagination can reveal facts only about necessities involving only the proper sensibles (colors, smells, sounds) and space and time (Kant's forms of intuition). It cannot, by itself, tell us any of the necessary truths that are foundational to ethics or moral philosophy. This is not to deny that imagination is indispensable in discerning the right thing to do in particular circumstances.

In addition, there is what Aquinas terms the 'estimative' sense of animals (and the corresponding 'cogitative' power of humans), which does give them some limited access to the evaluative dimension of reality, i.e., what is to be sought or avoided, such as: what is edible, dangerous, desirable as a mate, and so on. But again, this does not rise to the level of general and scientific knowledge of objective value. For that, the intellect must be involved. And so, there must be some direct connection between the intellect and the forms to be understood, a connection that does not depend *constitutively* on sense perception or imagination or the estimative sense and so is able to penetrate the Veil of Contingency. I am not denying that such intellectual knowledge depends causally on prior sense experience, as a necessary but not sufficient condition.

3. Human Knowledge *De Necessario*: An Aristotelian Account

Given that there must be some real connection between worldly essences and the human mind for modal and moral knowledge to be possible, we have to consider two possible connections: efficient and formal. The "platonist" (as we may call the first alternative) supposes that essences are mind-independent substances that interact by way of efficient causation with the human mind. The "aristotelian" (to give a label to the opposite view) supposes instead that there is some formal or constitutive relationship between the essences that are the objects of understanding and the acts of human understanding themselves.

The difficulty with the platonic account is that it cannot both attribute understanding to the human mind (as an intrinsic feature of that mind) and

maintain the strong, per se unity of the human person. Either understanding does not belong to the individual human person but to a system composed of that person and external, universal essences, or the human person itself is partly composed of external substances of a universal character. Neither option seems attractive.

If human thoughts are grounded in essences of external things that are not themselves external to the mind, then these essences must function as *accidents* of the human mind. This means that it cannot be numerically the same form of equinity that informs both my act of understanding and yours. Instead, there must be two forms of the same kind or species (namely, equinity). Similarly, the form of equinity in my mind cannot be numerically identical to the form of equinity of any individual horse.

This Aristotelian account immediately faces a problem, noted by Brower and Brower-Toland and by Panaccio. When a form acts as a formal cause of an intellectual act of understanding, it thereby constitutes a *qualitative accident* of the intellect.¹ However, suppose that the form that is understood is a substantial form or an accidental form belonging to one of the other, nonqualitative categories, such as quantity. In these cases, the same kind of form would have to act as a substantial or nonqualitative accidental form in relation to the natural instances of the species, but as a qualitative form in relation to the intellect.

And finally, the intelligible species has the being of an accident in the cognizer. (See SCG I, 46: “*Species intelligibilis in intellectu praeter essentiam eius existens esse accidentale habet.*”) How could an essence [in the category of substance] ever have the being of an accident? (Panaccio, 193)

For according to this theory, concepts represent things in virtue of standing in the relation of formal sameness to them and hence, can be only “about” things that are intrinsically the same as they are. But concepts, as we have seen, are accidental forms falling in the Aristotelian category of Quality,

¹That they are accidents is explicitly stated by Aquinas in the *Summa Theologiae* Part I, Q5, article 4 and *Summa Contra Gentiles* I, 46. Yves Simon writes, “All major Thomists are unanimous in affirming that immanent action is a quality.” (Simon, p. 66, n29) The immanent act of understanding is such an immanent action and does not fall into the Aristotelian category of *action*, since it lacks the essential properties of that category: to exist with motion, and to produce a passion in some patient.

and presumably qualities can only be intrinsically the same as other qualities. (Brower and Brower-Toland, 216)

One possible answer would be that the difference lies in the way in which the forms relate to minds (as objects of understanding) and the way in which they relate to natural instances (outside of the mind). In effect, this would involve two distinct forms of formal causation, one natural and the other intentional. There are two problems with this proposal. First, it very substantially increases the complexity of the theory. We now have really five modes of causation, material, efficient, final, and two distinct modes of formal causation. Second, as Brower and Brower-Toland point out, it isn't clear that the proposal solves the problem. If an intelligible species is always a qualitative form, how could it be of the same species as a nonqualitative form in nature? It would seem to be intrinsically different from such nonqualitative forms, and so not conspecific with them.

After all, if a quality (in this case a concept) is not in itself formally (or intrinsically) the same as any nonqualitative form, how could it suddenly become such merely by being possessed or instantiated in a special way? And what would explain its becoming formally the same as this thing rather than that? (Brower and Brower-Toland, 217)

A better solution to the proposal is this: we insist that the intelligible species can be intrinsically a form of a non-qualitative sort, even though in some sense its informing of the intellect results in an intellectual "quality" of the mind. And, we should insist that it is the very *same* relation of formal causation that relates nonqualitative forms to minds (resulting in intellectual qualities) and to natural instances (resulting in substances, quantities, and other nonqualitative entities). The nonqualitative form that is an intelligible species is a kind of qualitative accident because of the peculiar nature of the thing that it informs, namely, the intellect. The form is received in a way appropriate to the receiver: as a substance or quantity (when received by matter or a material substance), and as an intellectual quality (when received by the intellect).

I think that perhaps the best way of thinking about this is to introduce a third entity into the picture: a qualitative *act of understanding*. This act of understanding is a form in the category of quality and informs the intellect in the same way that other qualities inform their subjects. The nonqualitative intelligible species would not (in my proposal) *directly* inform the intellect.

Rather, it informs the act of understanding, which, in turn, qualitatively informs the intellect.

This still leaves us with a problem: how can the act of understanding (which *ex hypothesi* is an accidental form) be conspecific with substances and nonqualitative accidents, as the Identity Thesis requires? I think the answer is pretty straightforward. An intelligible species is conspecific with some natural form if and only if the two forms are functionally interchangeable, each having, by virtue of its intrinsic character, the potentiality of doing exactly what the other does. My concept of a horse is a form that could, if it were (*per impossibile*) informing some appropriate signate matter, be the substantial form of a real horse, just as the substantial form of any real horse could, if it were (*per impossibile*) informing some act of understanding in my mind, be an intelligible species of equinity in my mind. To put the equivalence in Scotistic terms, the intelligible species of equinity in my mind is distinct from the substantial form of any given horse because of the numerical distinctness of my act of understanding the horse and the signate matter of the natural horse, just as the distinctness of the substantial forms of any two horses is grounded in the distinctness of the two parcels of signate matter.

Aquinas seems to embrace such a theory, when he refers to the intelligible species as the “essential quality” of the thing known. Here is Robert Schmidt’s summary of the Thomistic view:

The form or species received into the intellect is at once the accidental quality of the intellect and the essential quality of the thing known... [Footnote 53 The expression “essential quality” is used *In I Perh.*, 10, n. 10. Accidental and “substantial” quality are contrasted, *In V Met.* 22, n. 1581.] It is at once the form of the intellect and of the thing known, and is therefore similar to the thing known according to its whole intelligible being. (Schmidt, 110)

There is an analogy in Aristotelian thought between the way that color modifies the transparent medium and the way a form informs the intellect’s act of understanding (see Burnyeat 2001). I will offer analogous interpretations of the two cases. In my interpretation of the transmission of color through the air, the form of a color modifies the quality of transparency of the air. The result is transparent air (not colored air) but with the *spiritual* or *intentional* presence of color, a spiritual accident of the air itself. The form of color belongs to the category of quality, but the spiritual accident of color is a second-order quality: a quality of a quality (in this case, a quality of the quality of transparency). When instead a form of color

directly modifies the surface of a body, the result is a body with the quality of color, i.e., a colored body. Color does not modify the air in that way but only indirectly, via modifying the quality of transparency. Therefore, a spiritual change in quality does not require any change in the first-order qualities of the air, and so, as Aquinas teaches, the spiritual change in the transparent medium does not require any natural change (*In II De Anima*, Lectio 14 n418).

Since transparent air lacks any intrinsic color, the quality of transparency is a potential subject of any color whatsoever. Similarly, since the act of understanding is an immaterial act (i.e., an act only of the soul, without a corporeal organ), it is a potential subject of any material form whatsoever (that is, any form whose natural subject is material).

4. Deflationary alternatives to the Identity Thesis

That completes my defense of the Aristotelian and Thomistic doctrine of the formal identity of the intelligible species with natural forms. In this section, I will consider three alternative interpretations of Aquinas on this point, or perhaps we should call them three deflationary interpretations of the Formal Identity Thesis:

1. Formal identity is just similitude, similarity (Panaccio)
2. Formal identity consists merely in causal contact with the world (Pasnau and O'Callaghan).
3. Formal identity is a primitive form of intentionality (Brower and Brower-Toland)

4.1 Formal Identity is Just Similitude (Panaccio)

Claude Panaccio has argued that formal identity is just similitude. If we ask *How does the nature of the thing understood exist in the mind?* Panaccio contends, “The striking thing here is that when Aquinas wants to tackle the question, he inevitably resorts to the idea of mental similarity (similitude) as being explicative in such matters.” (Panaccio, 187) Panaccio cites the Disputed Questions on Truth I, 3: “The intellect forming quiddities has *nothing but a similitude* of the thing existing outside the mind [*Intellectus formans quidditates non habet nisi similitudinem rei existentis extra animam*].” (Panaccio, p. 193)

Panaccio argues:

The very expression ‘forming quiddities’ that could make us think that the quiddities existed somehow in the mind is here entirely explained by – and hence reduced to – similitude, rather than the other way around. (Panaccio, p. 193)

However, as Stump has argued, the relevant notion of similitude is to be understood in terms of the sharing of forms. Things can be similar in many ways: what makes an act of understanding epistemically relevant is that it shares the very same sort of form shared by the natural species being understood.

‘Similitudo’ is cognate with ‘similis’ (the Latin for ‘similar’); and things are similar insofar as they share qualities – or, as Aquinas would say, forms. And so, on his view, ‘similitude is grounded in an agreement in or sharing of forms. Consequently, there are many kinds of similitude, corresponding to the many ways of sharing forms.’ (ST I.4 a.3) See also QDV 8.8: ‘There is similitude between two things insofar as there is agreement in form.’ (Stump, p. 290n5)

4.2 Formal Identity Consists in Mere Causal Contact (Pasnau, O’Callaghan)

Robert Pasnau and John O’Callaghan have suggested that the formal identity of our concepts with extra-mental forms consists simply in their causal contact with that external world.

Aquinas’s claims of a formal identity and a likeness relationship between knower and known are not just unargued assumptions in his theory of knowledge. Rather, these claims should be seen as based on causal facts about the relationship between cognitive agents and the outside world. It’s because external objects make an impression on our sensory organs and (indirectly) on our higher-order faculties that those impressions, under the name ‘species,’ are formally identical to, and are likenesses of, external objects. Formal identity is thus guaranteed by our causal connections with the world.... In the end, formal identity is a matter of something entirely uncontroversial: that our ideas and impressions are caused from without. (Pasnau, p. 105)

O’Callaghan similarly suggests that causation alone is sufficient for the relevant kind of similitude or formal identity:

It is a general principle for St. Thomas that agents act to produce a likeness of themselves in their effects. There is a common but simplistic way of understanding this that renders it manifestly false, namely something like visual or sensual likeness... But St. Thomas does not understand it in this visual way. The character of the effect is determined by the characteristic of the cause relevant to its agency – the pitcher was shattered because the rock was solid and massive, not because it was gray.... The formal character of the effect is determined by the formal character of the cause – that is what the likeness or similitude consists in. (O’Callaghan, p. 228)

However, a causal connection is not, by itself, sufficient to explain our knowledge of the essential truths associated with natural forms, if the causal chain between the natural entities and the mind is interrupted by the Veil of Contingency. If every causal connection is mediated by merely contingent events in the realm of sensibility, then we cannot explain our knowledge of necessary truths. We need a causal connection of some kind (including, possibly, a formal-causal connection) between those natural forms and human judgments.

O’Callaghan adds a factor that might render his account and mine compatible. He suggests that a causally generated “likeness” grounds cognition only because of the nature of the human intellect:

So why is a likeness in a cognitive power, in particular in the intellect, a cognition? Not simply because it is a likeness as such, but because of the character of the recipient of the likeness. The effect is received in the recipient after the mode of being of the recipient, not after the mode of being of the cause or agent. (O’Callaghan, p. 231)

This is correct, so long as we take into account the effect that is produced in these cases includes the fact that the natural form stands in a relation of formal-causation to an act of understanding, a result that does not follow in all cases of efficient causation alone.

4.3 Formal Identity is Just Primitive Intentionality

Jeffrey Brower and Susan Brower-Toland have suggested that, in Aquinas’s theory, the understood forms are “present” in the intellect simply because the intellect contains a concept that represents the form. Brower and

Brower-Toland propose that this representation relation is metaphysically primitive or undefinable for Aquinas. They propose,

Whenever Aquinas speaks of the form of some object being intentionally present in the mind, we take this to mean that the form of the object in question is present in the mind via the mind's possession of a concept that represents it." (Brower and Brower-Toland, p. 227) They cite the *Disputed Questions on Truth* 2.3 ad 9: "The likeness can be understood as representation – and this sort of likeness is required between cognizer and cognized.

The textual evidence for this interpretation is inconclusive, and so the hermeneutic question must turn on which proffered theory makes the most sense. I agree with Brower and Brower-Toland (and with Pasnau and others) that the problem of intentionality alone may not be sufficient to take the Formal Identity theory seriously. (However, see Klima 2001a and 2001b, and Ross 2008, for impressive arguments to the contrary.) However, once we take into account the problem of knowledge *de necessario*, the need for the formal action of natures on the mind becomes clear.

What if we tried to amplify the Brower-Brower-Toland account by making the primitive intentionality relation into a formal-causal relation, of the sort that could convey information about necessary essential truths to the mind? There would be two difficulties with such a proposal. First, in terms of economy, it would require a large number of formal-causal connections for each human concept: the concept would have to be simultaneously informed by *all* the natural forms of the same species or genus, and not just by a single form located in the mind. Second, and more importantly, the proposal would run afoul of the anti-Platonic argument in section 3. The mechanisms of human understanding would no longer be entirely intrinsic to the individual human mind. Instead, the subject of understanding, the one who really understands, would comprise the human being together with all of the natural forms intended by that human's thoughts.

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1. Introduction

Both Aristotle and Thomas Aquinas subscribe to a Formal Identity theory about the relation between the human mind and the extra-mental objects of our understanding. This has been one of the most controversial features of Aristotelian and Thomistic metaphysics of the mind. I offer here a defense of the Formal Identity Thesis and of the immateriality of the human intellect, based on specifically epistemological arguments about our knowledge of necessary or essential truths, including especially essential truths about value.

Rather than speaking in terms of *a priori* vs. *a posteriori*, I will speak of knowledge of necessity (*de necessario*) and knowledge of contingency (*de contingente*). The epistemological problem I will focus on concerns what I call the Veil of Contingency. There is a gap between the set of contingent truths (available in sense perception, memory, and testimony) and the set of necessary truths. The contingent truths about the actual world underdetermine the necessary truths, including necessary truths of mathematics, science, and ethics.

For Aristotelians, the class of necessary truths and the class of truths that are somehow grounded by essences are identical. All necessary truths are essential truths or grounded in essential truths, and all essential truths and all truths grounded in essence are necessary. For similar reasons, the necessary and the “universal” are coterminous. What is universal is necessary, and what is necessary is universal. Merely accidental generalizations do not count as ‘universal’ in the relevant sense.

For Aristotelians, it is abstraction by the active intellect that gives us access to essence, and thereby to *de necessario* knowledge. When the intellect

gains access to a form, that form is “in” the intellect. That is, each concept of an essence is a form, a form belonging to an individual mind and of the same kind as (conspecific with) forms occurring outside the mind in nature. There is a direct causal relation of some kind (I will argue, a *formal* causal connection) between these internal forms and acts of understanding and of judgment by the individual human being. Aquinas and those scholastics who follow him call these internal forms the ‘intelligible species’. According to what I am calling the Formal Identity Thesis, the intelligible species is literally conspecific with the substances or accidents in nature being understood. This thesis is explicitly and notoriously propounded by Aristotle in Book 3 of *De Anima*:

Now as to that part of the soul by which it has both cognition and understanding... it must be something unaffected which yet receives the form and is potentially of the same kind as its object but not the same particular... (Aristotle, p. 201, Book 3, chapter 4)

And indeed there is an intellect characterized by the capacity to become all things, and an intellect characterized by that to bring all things about, and to bring them about in just the way that a state, like light, does. (For in a way, light also makes things that are potentially colours colours in actuality.) (Aristotle, p. 204, Book 3, chapter 5)

I will argue in section 2 that some reification of form is necessary to ground our knowledge of objective value. Then, in section 3, I offer an Aristotelian account of our moral knowledge, in terms of the formal identity of the intellect with its object. I criticize three alternative interpretations of Thomas Aquinas’s Formal Identity Thesis in section 4.

2. Knowledge De Bono: The Need for a Connection

Knowledge of value requires knowledge of necessities. There are two compelling Aristotelian reasons why knowledge of the good must be grounded in the knowledge of specific natures.

1. Since *good* is not a genus (*Summa Contra Gentiles* I, 25, 6 and *De Veritate* 1), we grasp particular goods by understanding them as standing in analogies to one another, modes of perfection of different species. So, it is impossible to gain knowledge of the good except in relation to definite forms. If there were no knowledge of creaturely essences, there would be no knowledge of value. Aquinas

clearly states this argument in the *Summa Theologiae*, Part I, Question 5:

The essence of goodness consists in mode, species, and order.

I answer that, everything is said to be good so far as it is perfect; for in that way only is it desirable (as shown above Articles [1], 3). Now a thing is said to be perfect if it lacks nothing according to the mode of its perfection. But since everything is what it is by its form (and since the form presupposes certain things, and from the form certain things necessarily follow), in order for a thing to be perfect and good it must have a form, together with all that precedes and follows upon that form. Now the form presupposes determination or commensuration of its principles, whether material or efficient, and this is signified by the mode: hence it is said that the measure marks the mode. But the form itself is signified by the species; for everything is placed in its species by its form.... Further, upon the form follows an inclination to the end, or to an action, or something of the sort; for everything, in so far as it is in act, acts and tends towards that which is in accordance with its form; and this belongs to weight and order. Hence the essence of goodness, so far as it consists in perfection, consists also in mode, species and order. (*Summa Theologiae* Part I, Q5, a5)

2. We gain knowledge of the good (and other transcendentals, like *being*, *truth*, and *one*) by *reflection* on the primary acts of the intellect, which must be directed to specific natures (Lonergan, p. 66). For example, what Aquinas says about our understanding of truth in *De Veritate* would apply, *mutatis mutandis*, to our knowledge of the good:

And truth is known by the intellect in view of the fact that the intellect reflects upon its own act – not merely as knowing its own act, but as knowing the proportion of its act to the thing. Now, this proportion cannot be known without knowing the nature of the act; and the nature of the act cannot be known without knowing the nature of the active principle, that is, the intellect itself, to whose nature it belongs to be conformed to things. Consequently, it is because the intellect reflects upon itself that it knows truth. (*De Veritate*, Q1, A9, reply)

Being and goodness are convertible. The good is *being as desired*. A good *F* is an *F* that is perfect in its specific nature. The particular goods are analogously and not univocally related to one another. This means that there is no such thing as *a* or *the* form of the good, whether we think of such a form as a Platonic substance or as an individual form. Our knowledge of the

objective good is dependent on our knowledge of specific natural forms and of their necessary relations of analogy to one another.

How far does this principle of analogy stretch? Are there forms of the being of the categories: i.e., substantial being, quantitative being, qualitative being, etc.? Is there similarly a single form of *good substance* or *good action* or *good quality*? Is it only trans-categorical predications that count as analogical rather than univocal?

I think not. Even within a category, the ways of being are quite different; e.g., the substantial being of a stone is quite different from that of a man, or from that of an angel. Aquinas makes a distinction between the common notion of good and “particular goods” in the *Summa Theologiae* I-II, Q10, a2. As Aquinas states, “Any particular good, insofar as it is lacking some good, can be regarded as non-good.” In article 1 of that question, he makes clear that the will is directed of necessity to a general good (a transcendental) and not to any particular good, which I take to mean that there is no genus of good action or good quality. To be a good action, an action must be good in all respects: object, end, and appropriateness to circumstances, all in accordance with right reason. (*Summa Theologiae* I-II, Q18, a4)

There must be, in addition, a connection between our understanding of essences and forms, on the one hand, and our knowledge of necessary truths, on the other. Our knowledge of necessities is, with one exception, based upon our understanding of the essences involved. (The one exception is that we can infer the necessary existence of God as first cause, without grasping His essence.) Yves Simon describes this connection between essences and necessities:

Consider theoretical science. To the extent that it achieves its ideal, it moves beyond the existential data to concern itself with general types and intelligible laws, or, in other words, with formulae of possibility, with essential necessities. Unsupported by rational analysis, empirical hypotheses derived from factual observations represent an incomplete kind of knowing, indeed, a partial defeat of science. The perfection of theoretical knowledge depends above all on the necessity of its object. Thus every time we manage to abstract from experience to reach a necessary object, our understanding, though bearing now on an object separated from existence, is more perfect than our experimental knowledge, which bears on physical existence alone. (Simon, p. 86)

2.1 A Transcendental Argument

I offer here a transcendental argument for the claim that there must be some connection (either causal or metaphysical) between the appearance of value to us and the essential facts about value. The first is a transcendental argument, with an appeal to something analogous to a causal constraint on knowledge.

1. If there were no connection, causal or constitutive, between our judgments about necessity and the corresponding facts about essences, we would have no knowledge of necessity.
2. We do have such knowledge.
3. Therefore, there is some connection, causal or constitutive, between our judgments of necessity and the corresponding essential facts.

Edmund Gettier's paper (1963) revealed the bankruptcy of defining knowledge in terms of justified true belief. Post-Gettier reflections on knowledge have revealed that, at least in the paradigmatic cases of perception, memory, and testimony, knowledge requires a real connection of some kind between the mental state of knowledge and the facts so known. I argued in *Realism Regained* (Koons 2000) that a similar constraint is also required for our knowledge of the laws of nature, mathematics, and logic (see also Koons 2017 and Koons 2018). John Bengson has recently made a similar argument (Bengson 2015). The key fact is that our intuitive (justified) true beliefs can also be Gettierized.

Suppose that a drug XYZ produces randomized intellectual seemings (or, if you prefer, causes our ordinary rational faculties to generate beliefs with randomized contents). When administered to a group of subjects, it is predictable that 1% end up with true intuitive beliefs, 99% with false ones. Those relying on veridical seemings (or belief-generation) under these circumstances do not gain knowledge, although they may have justified true beliefs (assuming that they don't know about the drug and its effect).

Does this result depend in any way on contingency – that is, on the possibility of a given subject believing differently? Replace the drug with genetic manipulation of human gametes. Given origins essentialism, the 1% that end up with true beliefs might have the disposition toward those beliefs essentially. This is still not good enough for knowledge.

Would it be sufficient if the seemings or dispositions to believe were essential to one's species? I think not: just replace the preceding scenarios

with one in which aliens manipulate the evolutionary history of intelligent species on 100 planets, producing reliably true beliefs in 1, mostly false beliefs in 99, with all 100 species equally adept at reproduction. The one intelligent species with species-wide essential dispositions to true belief still lacks knowledge, because of the lack of a real connection between their seemings and dispositions and the relevant truths (whether those truths are themselves necessary or contingent).

The upshot of these thought experiments is this: knowledge is undermined so long as there are relevantly similar seemings or dispositions that are unreliable with respect to truth, and which had an equal or nearly equal propensity to exist.

What if it were metaphysically impossible for there to exist relevantly similar seemings that are false? I reply: Is this impossibility supposed to be true as a matter of brute necessity? It is hard to believe in such a metaphysical necessity without some ground – a ground that only a real connection can provide. And, in any case, a merely brute necessity is too accidental to provide the needed connection between beliefs and their objects. Counterpossible scenarios in which the brute necessity was violated would be epistemologically relevant.

2.2 Sensory Knowledge and Imagination cannot Fill the Gap

Can sensory knowledge alone provide us with the connection that is needed for this knowledge of necessity? I would argue that it cannot, since sensory knowledge can give us knowledge only of *contingent* matters of fact, and there is a Veil of Contingency lying between such matters of fact and the necessary features of the essences of the things perceived. David Hume was perhaps the first to posit such a veil explicitly, arguing that we never directly observe the “necessary connections” between matters of fact, but this deficiency of the power of sensory perception was already an implicit element in the Aristotelian and scholastic traditions. We can only perceive directly the proper sensibles of each of our five senses (i.e., colors, sounds, smells, tastes, and tactile qualities). Even when the common sense is included, our sensory knowledge is limited to the actual distribution of these qualities and quantities, which always lies on the near side of the Veil of Contingency.

It is true that the sensory imagination gives us some limited access to information about what is possible or impossible. However, it is clearly at best a fallible guide to possibility, and so not a source of real knowledge. In addition, since we are concerned here about our knowledge of value, the power of imagination by itself cannot provide us with access to the essences of natural things, like human beings. Imagination can reveal facts only about necessities involving only the proper sensibles (colors, smells, sounds) and space and time (Kant's forms of intuition). It cannot, by itself, tell us any of the necessary truths that are foundational to ethics or moral philosophy. This is not to deny that imagination is indispensable in discerning the right thing to do in particular circumstances.

In addition, there is what Aquinas terms the 'estimative' sense of animals (and the corresponding 'cogitative' power of humans), which does give them some limited access to the evaluative dimension of reality, i.e., what is to be sought or avoided, such as: what is edible, dangerous, desirable as a mate, and so on. But again, this does not rise to the level of general and scientific knowledge of objective value. For that, the intellect must be involved. And so, there must be some direct connection between the intellect and the forms to be understood, a connection that does not depend *constitutively* on sense perception or imagination or the estimative sense and so is able to penetrate the Veil of Contingency. I am not denying that such intellectual knowledge depends causally on prior sense experience, as a necessary but not sufficient condition.

3. Human Knowledge *De Necessario*: An Aristotelian Account

Given that there must be some real connection between worldly essences and the human mind for modal and moral knowledge to be possible, we have to consider two possible connections: efficient and formal. The "platonist" (as we may call the first alternative) supposes that essences are mind-independent substances that interact by way of efficient causation with the human mind. The "aristotelian" (to give a label to the opposite view) supposes instead that there is some formal or constitutive relationship between the essences that are the objects of understanding and the acts of human understanding themselves.

The difficulty with the platonic account is that it cannot both attribute understanding to the human mind (as an intrinsic feature of that mind) and

maintain the strong, per se unity of the human person. Either understanding does not belong to the individual human person but to a system composed of that person and external, universal essences, or the human person itself is partly composed of external substances of a universal character. Neither option seems attractive.

If human thoughts are grounded in essences of external things that are not themselves external to the mind, then these essences must function as *accidents* of the human mind. This means that it cannot be numerically the same form of equinity that informs both my act of understanding and yours. Instead, there must be two forms of the same kind or species (namely, equinity). Similarly, the form of equinity in my mind cannot be numerically identical to the form of equinity of any individual horse.

This Aristotelian account immediately faces a problem, noted by Brower and Brower-Toland and by Panaccio. When a form acts as a formal cause of an intellectual act of understanding, it thereby constitutes a *qualitative accident* of the intellect.¹ However, suppose that the form that is understood is a substantial form or an accidental form belonging to one of the other, nonqualitative categories, such as quantity. In these cases, the same kind of form would have to act as a substantial or nonqualitative accidental form in relation to the natural instances of the species, but as a qualitative form in relation to the intellect.

And finally, the intelligible species has the being of an accident in the cognizer. (See SCG I, 46: “*Species intelligibilis in intellectu praeter essentiam eius existens esse accidentale habet.*”) How could an essence [in the category of substance] ever have the being of an accident? (Panaccio, 193)

For according to this theory, concepts represent things in virtue of standing in the relation of formal sameness to them and hence, can be only “about” things that are intrinsically the same as they are. But concepts, as we have seen, are accidental forms falling in the Aristotelian category of Quality,

¹That they are accidents is explicitly stated by Aquinas in the *Summa Theologiae* Part I, Q5, article 4 and *Summa Contra Gentiles* I, 46. Yves Simon writes, “All major Thomists are unanimous in affirming that immanent action is a quality.” (Simon, p. 66, n29) The immanent act of understanding is such an immanent action and does not fall into the Aristotelian category of *action*, since it lacks the essential properties of that category: to exist with motion, and to produce a passion in some patient.

and presumably qualities can only be intrinsically the same as other qualities. (Brower and Brower-Toland, 216)

One possible answer would be that the difference lies in the way in which the forms relate to minds (as objects of understanding) and the way in which they relate to natural instances (outside of the mind). In effect, this would involve two distinct forms of formal causation, one natural and the other intentional. There are two problems with this proposal. First, it very substantially increases the complexity of the theory. We now have really five modes of causation, material, efficient, final, and two distinct modes of formal causation. Second, as Brower and Brower-Toland point out, it isn't clear that the proposal solves the problem. If an intelligible species is always a qualitative form, how could it be of the same species as a nonqualitative form in nature? It would seem to be intrinsically different from such nonqualitative forms, and so not conspecific with them.

After all, if a quality (in this case a concept) is not in itself formally (or intrinsically) the same as any nonqualitative form, how could it suddenly become such merely by being possessed or instantiated in a special way? And what would explain its becoming formally the same as this thing rather than that? (Brower and Brower-Toland, 217)

A better solution to the proposal is this: we insist that the intelligible species can be intrinsically a form of a non-qualitative sort, even though in some sense its informing of the intellect results in an intellectual "quality" of the mind. And, we should insist that it is the very *same* relation of formal causation that relates nonqualitative forms to minds (resulting in intellectual qualities) and to natural instances (resulting in substances, quantities, and other nonqualitative entities). The nonqualitative form that is an intelligible species is a kind of qualitative accident because of the peculiar nature of the thing that it informs, namely, the intellect. The form is received in a way appropriate to the receiver: as a substance or quantity (when received by matter or a material substance), and as an intellectual quality (when received by the intellect).

I think that perhaps the best way of thinking about this is to introduce a third entity into the picture: a qualitative *act of understanding*. This act of understanding is a form in the category of quality and informs the intellect in the same way that other qualities inform their subjects. The nonqualitative intelligible species would not (in my proposal) *directly* inform the intellect.

Rather, it informs the act of understanding, which, in turn, qualitatively informs the intellect.

This still leaves us with a problem: how can the act of understanding (which *ex hypothesi* is an accidental form) be conspecific with substances and nonqualitative accidents, as the Identity Thesis requires? I think the answer is pretty straightforward. An intelligible species is conspecific with some natural form if and only if the two forms are functionally interchangeable, each having, by virtue of its intrinsic character, the potentiality of doing exactly what the other does. My concept of a horse is a form that could, if it were (*per impossibile*) informing some appropriate signate matter, be the substantial form of a real horse, just as the substantial form of any real horse could, if it were (*per impossibile*) informing some act of understanding in my mind, be an intelligible species of equinity in my mind. To put the equivalence in Scotistic terms, the intelligible species of equinity in my mind is distinct from the substantial form of any given horse because of the numerical distinctness of my act of understanding the horse and the signate matter of the natural horse, just as the distinctness of the substantial forms of any two horses is grounded in the distinctness of the two parcels of signate matter.

Aquinas seems to embrace such a theory, when he refers to the intelligible species as the “essential quality” of the thing known. Here is Robert Schmidt’s summary of the Thomistic view:

The form or species received into the intellect is at once the accidental quality of the intellect and the essential quality of the thing known... [Footnote 53 The expression “essential quality” is used *In I Perh.*, 10, n. 10. Accidental and “substantial” quality are contrasted, *In V Met.* 22, n. 1581.] It is at once the form of the intellect and of the thing known, and is therefore similar to the thing known according to its whole intelligible being. (Schmidt, 110)

There is an analogy in Aristotelian thought between the way that color modifies the transparent medium and the way a form informs the intellect’s act of understanding (see Burnyeat 2001). I will offer analogous interpretations of the two cases. In my interpretation of the transmission of color through the air, the form of a color modifies the quality of transparency of the air. The result is transparent air (not colored air) but with the *spiritual* or *intentional* presence of color, a spiritual accident of the air itself. The form of color belongs to the category of quality, but the spiritual accident of color is a second-order quality: a quality of a quality (in this case, a quality of the quality of transparency). When instead a form of color

directly modifies the surface of a body, the result is a body with the quality of color, i.e., a colored body. Color does not modify the air in that way but only indirectly, via modifying the quality of transparency. Therefore, a spiritual change in quality does not require any change in the first-order qualities of the air, and so, as Aquinas teaches, the spiritual change in the transparent medium does not require any natural change (*In II De Anima*, Lectio 14 n418).

Since transparent air lacks any intrinsic color, the quality of transparency is a potential subject of any color whatsoever. Similarly, since the act of understanding is an immaterial act (i.e., an act only of the soul, without a corporeal organ), it is a potential subject of any material form whatsoever (that is, any form whose natural subject is material).

4. Deflationary alternatives to the Identity Thesis

That completes my defense of the Aristotelian and Thomistic doctrine of the formal identity of the intelligible species with natural forms. In this section, I will consider three alternative interpretations of Aquinas on this point, or perhaps we should call them three deflationary interpretations of the Formal Identity Thesis:

1. Formal identity is just similitude, similarity (Panaccio)
2. Formal identity consists merely in causal contact with the world (Pasnau and O'Callaghan).
3. Formal identity is a primitive form of intentionality (Brower and Brower-Toland)

4.1 Formal Identity is Just Similitude (Panaccio)

Claude Panaccio has argued that formal identity is just similitude. If we ask *How does the nature of the thing understood exist in the mind?* Panaccio contends, “The striking thing here is that when Aquinas wants to tackle the question, he inevitably resorts to the idea of mental similarity (similitude) as being explicative in such matters.” (Panaccio, 187) Panaccio cites the Disputed Questions on Truth I, 3: “The intellect forming quiddities has *nothing but a similitude* of the thing existing outside the mind [*Intellectus formans quidditates non habet nisi similitudinem rei existentis extra animam*].” (Panaccio, p. 193)

Panaccio argues:

The very expression ‘forming quiddities’ that could make us think that the quiddities existed somehow in the mind is here entirely explained by – and hence reduced to – similitude, rather than the other way around. (Panaccio, p. 193)

However, as Stump has argued, the relevant notion of similitude is to be understood in terms of the sharing of forms. Things can be similar in many ways: what makes an act of understanding epistemically relevant is that it shares the very same sort of form shared by the natural species being understood.

‘Similitudo’ is cognate with ‘similis’ (the Latin for ‘similar’); and things are similar insofar as they share qualities – or, as Aquinas would say, forms. And so, on his view, ‘similitude is grounded in an agreement in or sharing of forms. Consequently, there are many kinds of similitude, corresponding to the many ways of sharing forms.’ (ST I.4 a.3) See also QDV 8.8: ‘There is similitude between two things insofar as there is agreement in form.’ (Stump, p. 290n5)

4.2 Formal Identity Consists in Mere Causal Contact (Pasnau, O’Callaghan)

Robert Pasnau and John O’Callaghan have suggested that the formal identity of our concepts with extra-mental forms consists simply in their causal contact with that external world.

Aquinas’s claims of a formal identity and a likeness relationship between knower and known are not just unargued assumptions in his theory of knowledge. Rather, these claims should be seen as based on causal facts about the relationship between cognitive agents and the outside world. It’s because external objects make an impression on our sensory organs and (indirectly) on our higher-order faculties that those impressions, under the name ‘species,’ are formally identical to, and are likenesses of, external objects. Formal identity is thus guaranteed by our causal connections with the world.... In the end, formal identity is a matter of something entirely uncontroversial: that our ideas and impressions are caused from without. (Pasnau, p. 105)

O'Callaghan similarly suggests that causation alone is sufficient for the relevant kind of similitude or formal identity:

It is a general principle for St. Thomas that agents act to produce a likeness of themselves in their effects. There is a common but simplistic way of understanding this that renders it manifestly false, namely something like visual or sensual likeness... But St. Thomas does not understand it in this visual way. The character of the effect is determined by the characteristic of the cause relevant to its agency – the pitcher was shattered because the rock was solid and massive, not because it was gray.... The formal character of the effect is determined by the formal character of the cause – that is what the likeness or similitude consists in. (O'Callaghan, p. 228)

However, a causal connection is not, by itself, sufficient to explain our knowledge of the essential truths associated with natural forms, if the causal chain between the natural entities and the mind is interrupted by the Veil of Contingency. If every causal connection is mediated by merely contingent events in the realm of sensibility, then we cannot explain our knowledge of necessary truths. We need a causal connection of some kind (including, possibly, a formal-causal connection) between those natural forms and human judgments.

O'Callaghan adds a factor that might render his account and mine compatible. He suggests that a causally generated “likeness” grounds cognition only because of the nature of the human intellect:

So why is a likeness in a cognitive power, in particular in the intellect, a cognition? Not simply because it is a likeness as such, but because of the character of the recipient of the likeness. The effect is received in the recipient after the mode of being of the recipient, not after the mode of being of the cause or agent. (O'Callaghan, p. 231)

This is correct, so long as we take into account the effect that is produced in these cases includes the fact that the natural form stands in a relation of formal-causation to an act of understanding, a result that does not follow in all cases of efficient causation alone.

4.3 Formal Identity is Just Primitive Intentionality

Jeffrey Brower and Susan Brower-Toland have suggested that, in Aquinas's theory, the understood forms are “present” in the intellect simply because the intellect contains a concept that represents the form. Brower and

Brower-Toland propose that this representation relation is metaphysically primitive or undefinable for Aquinas. They propose,

Whenever Aquinas speaks of the form of some object being intentionally present in the mind, we take this to mean that the form of the object in question is present in the mind via the mind's possession of a concept that represents it." (Brower and Brower-Toland, p. 227) They cite the *Disputed Questions on Truth* 2.3 ad 9: "The likeness can be understood as representation – and this sort of likeness is required between cognizer and cognized.

The textual evidence for this interpretation is inconclusive, and so the hermeneutic question must turn on which proffered theory makes the most sense. I agree with Brower and Brower-Toland (and with Pasnau and others) that the problem of intentionality alone may not be sufficient to take the Formal Identity theory seriously. (However, see Klima 2001a and 2001b, and Ross 2008, for impressive arguments to the contrary.) However, once we take into account the problem of knowledge *de necessario*, the need for the formal action of natures on the mind becomes clear.

What if we tried to amplify the Brower-Brower-Toland account by making the primitive intentionality relation into a formal-causal relation, of the sort that could convey information about necessary essential truths to the mind? There would be two difficulties with such a proposal. First, in terms of economy, it would require a large number of formal-causal connections for each human concept: the concept would have to be simultaneously informed by *all* the natural forms of the same species or genus, and not just by a single form located in the mind. Second, and more importantly, the proposal would run afoul of the anti-Platonic argument in section 3. The mechanisms of human understanding would no longer be entirely intrinsic to the individual human mind. Instead, the subject of understanding, the one who really understands, would comprise the human being together with all of the natural forms intended by that human's thoughts.

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HYLOMORPHISM AND OUR KNOWLEDGE OF VALUE

ROBERT C. KOONS

1. Introduction

Both Aristotle and Thomas Aquinas subscribe to a Formal Identity theory about the relation between the human mind and the extra-mental objects of our understanding. This has been one of the most controversial features of Aristotelian and Thomistic metaphysics of the mind. I offer here a defense of the Formal Identity Thesis and of the immateriality of the human intellect, based on specifically epistemological arguments about our knowledge of necessary or essential truths, including especially essential truths about value.

Rather than speaking in terms of *a priori* vs. *a posteriori*, I will speak of knowledge of necessity (*de necessario*) and knowledge of contingency (*de contingente*). The epistemological problem I will focus on concerns what I call the Veil of Contingency. There is a gap between the set of contingent truths (available in sense perception, memory, and testimony) and the set of necessary truths. The contingent truths about the actual world underdetermine the necessary truths, including necessary truths of mathematics, science, and ethics.

For Aristotelians, the class of necessary truths and the class of truths that are somehow grounded by essences are identical. All necessary truths are essential truths or grounded in essential truths, and all essential truths and all truths grounded in essence are necessary. For similar reasons, the necessary and the “universal” are coterminous. What is universal is necessary, and what is necessary is universal. Merely accidental generalizations do not count as ‘universal’ in the relevant sense.

For Aristotelians, it is abstraction by the active intellect that gives us access to essence, and thereby to *de necessario* knowledge. When the intellect

gains access to a form, that form is “in” the intellect. That is, each concept of an essence is a form, a form belonging to an individual mind and of the same kind as (conspecific with) forms occurring outside the mind in nature. There is a direct causal relation of some kind (I will argue, a *formal* causal connection) between these internal forms and acts of understanding and of judgment by the individual human being. Aquinas and those scholastics who follow him call these internal forms the ‘intelligible species’. According to what I am calling the Formal Identity Thesis, the intelligible species is literally conspecific with the substances or accidents in nature being understood. This thesis is explicitly and notoriously propounded by Aristotle in Book 3 of *De Anima*:

Now as to that part of the soul by which it has both cognition and understanding... it must be something unaffected which yet receives the form and is potentially of the same kind as its object but not the same particular... (Aristotle, p. 201, Book 3, chapter 4)

And indeed there is an intellect characterized by the capacity to become all things, and an intellect characterized by that to bring all things about, and to bring them about in just the way that a state, like light, does. (For in a way, light also makes things that are potentially colours colours in actuality.) (Aristotle, p. 204, Book 3, chapter 5)

I will argue in section 2 that some reification of form is necessary to ground our knowledge of objective value. Then, in section 3, I offer an Aristotelian account of our moral knowledge, in terms of the formal identity of the intellect with its object. I criticize three alternative interpretations of Thomas Aquinas’s Formal Identity Thesis in section 4.

2. Knowledge De Bono: The Need for a Connection

Knowledge of value requires knowledge of necessities. There are two compelling Aristotelian reasons why knowledge of the good must be grounded in the knowledge of specific natures.

1. Since *good* is not a genus (*Summa Contra Gentiles* I, 25, 6 and *De Veritate* 1), we grasp particular goods by understanding them as standing in analogies to one another, modes of perfection of different species. So, it is impossible to gain knowledge of the good except in relation to definite forms. If there were no knowledge of creaturely essences, there would be no knowledge of value. Aquinas

clearly states this argument in the *Summa Theologiae*, Part I, Question 5:

The essence of goodness consists in mode, species, and order.

I answer that, everything is said to be good so far as it is perfect; for in that way only is it desirable (as shown above Articles [1], 3). Now a thing is said to be perfect if it lacks nothing according to the mode of its perfection. But since everything is what it is by its form (and since the form presupposes certain things, and from the form certain things necessarily follow), in order for a thing to be perfect and good it must have a form, together with all that precedes and follows upon that form. Now the form presupposes determination or commensuration of its principles, whether material or efficient, and this is signified by the mode: hence it is said that the measure marks the mode. But the form itself is signified by the species; for everything is placed in its species by its form.... Further, upon the form follows an inclination to the end, or to an action, or something of the sort; for everything, in so far as it is in act, acts and tends towards that which is in accordance with its form; and this belongs to weight and order. Hence the essence of goodness, so far as it consists in perfection, consists also in mode, species and order. (*Summa Theologiae* Part I, Q5, a5)

2. We gain knowledge of the good (and other transcendentals, like *being*, *truth*, and *one*) by *reflection* on the primary acts of the intellect, which must be directed to specific natures (Lonergan, p. 66). For example, what Aquinas says about our understanding of truth in *De Veritate* would apply, *mutatis mutandis*, to our knowledge of the good:

And truth is known by the intellect in view of the fact that the intellect reflects upon its own act – not merely as knowing its own act, but as knowing the proportion of its act to the thing. Now, this proportion cannot be known without knowing the nature of the act; and the nature of the act cannot be known without knowing the nature of the active principle, that is, the intellect itself, to whose nature it belongs to be conformed to things. Consequently, it is because the intellect reflects upon itself that it knows truth. (*De Veritate*, Q1, A9, reply)

Being and goodness are convertible. The good is *being as desired*. A good *F* is an *F* that is perfect in its specific nature. The particular goods are analogously and not univocally related to one another. This means that there is no such thing as *a* or *the* form of the good, whether we think of such a form as a Platonic substance or as an individual form. Our knowledge of the

objective good is dependent on our knowledge of specific natural forms and of their necessary relations of analogy to one another.

How far does this principle of analogy stretch? Are there forms of the being of the categories: i.e., substantial being, quantitative being, qualitative being, etc.? Is there similarly a single form of *good substance* or *good action* or *good quality*? Is it only trans-categorical predications that count as analogical rather than univocal?

I think not. Even within a category, the ways of being are quite different; e.g., the substantial being of a stone is quite different from that of a man, or from that of an angel. Aquinas makes a distinction between the common notion of good and “particular goods” in the *Summa Theologiae* I-II, Q10, a2. As Aquinas states, “Any particular good, insofar as it is lacking some good, can be regarded as non-good.” In article 1 of that question, he makes clear that the will is directed of necessity to a general good (a transcendental) and not to any particular good, which I take to mean that there is no genus of good action or good quality. To be a good action, an action must be good in all respects: object, end, and appropriateness to circumstances, all in accordance with right reason. (*Summa Theologiae* I-II, Q18, a4)

There must be, in addition, a connection between our understanding of essences and forms, on the one hand, and our knowledge of necessary truths, on the other. Our knowledge of necessities is, with one exception, based upon our understanding of the essences involved. (The one exception is that we can infer the necessary existence of God as first cause, without grasping His essence.) Yves Simon describes this connection between essences and necessities:

Consider theoretical science. To the extent that it achieves its ideal, it moves beyond the existential data to concern itself with general types and intelligible laws, or, in other words, with formulae of possibility, with essential necessities. Unsupported by rational analysis, empirical hypotheses derived from factual observations represent an incomplete kind of knowing, indeed, a partial defeat of science. The perfection of theoretical knowledge depends above all on the necessity of its object. Thus every time we manage to abstract from experience to reach a necessary object, our understanding, though bearing now on an object separated from existence, is more perfect than our experimental knowledge, which bears on physical existence alone. (Simon, p. 86)

2.1 A Transcendental Argument

I offer here a transcendental argument for the claim that there must be some connection (either causal or metaphysical) between the appearance of value to us and the essential facts about value. The first is a transcendental argument, with an appeal to something analogous to a causal constraint on knowledge.

1. If there were no connection, causal or constitutive, between our judgments about necessity and the corresponding facts about essences, we would have no knowledge of necessity.
2. We do have such knowledge.
3. Therefore, there is some connection, causal or constitutive, between our judgments of necessity and the corresponding essential facts.

Edmund Gettier's paper (1963) revealed the bankruptcy of defining knowledge in terms of justified true belief. Post-Gettier reflections on knowledge have revealed that, at least in the paradigmatic cases of perception, memory, and testimony, knowledge requires a real connection of some kind between the mental state of knowledge and the facts so known. I argued in *Realism Regained* (Koons 2000) that a similar constraint is also required for our knowledge of the laws of nature, mathematics, and logic (see also Koons 2017 and Koons 2018). John Bengson has recently made a similar argument (Bengson 2015). The key fact is that our intuitive (justified) true beliefs can also be Gettierized.

Suppose that a drug XYZ produces randomized intellectual seemings (or, if you prefer, causes our ordinary rational faculties to generate beliefs with randomized contents). When administered to a group of subjects, it is predictable that 1% end up with true intuitive beliefs, 99% with false ones. Those relying on veridical seemings (or belief-generation) under these circumstances do not gain knowledge, although they may have justified true beliefs (assuming that they don't know about the drug and its effect).

Does this result depend in any way on contingency – that is, on the possibility of a given subject believing differently? Replace the drug with genetic manipulation of human gametes. Given origins essentialism, the 1% that end up with true beliefs might have the disposition toward those beliefs essentially. This is still not good enough for knowledge.

Would it be sufficient if the seemings or dispositions to believe were essential to one's species? I think not: just replace the preceding scenarios

with one in which aliens manipulate the evolutionary history of intelligent species on 100 planets, producing reliably true beliefs in 1, mostly false beliefs in 99, with all 100 species equally adept at reproduction. The one intelligent species with species-wide essential dispositions to true belief still lacks knowledge, because of the lack of a real connection between their seemings and dispositions and the relevant truths (whether those truths are themselves necessary or contingent).

The upshot of these thought experiments is this: knowledge is undermined so long as there are relevantly similar seemings or dispositions that are unreliable with respect to truth, and which had an equal or nearly equal propensity to exist.

What if it were metaphysically impossible for there to exist relevantly similar seemings that are false? I reply: Is this impossibility supposed to be true as a matter of brute necessity? It is hard to believe in such a metaphysical necessity without some ground – a ground that only a real connection can provide. And, in any case, a merely brute necessity is too accidental to provide the needed connection between beliefs and their objects. Counterpossible scenarios in which the brute necessity was violated would be epistemologically relevant.

2.2 Sensory Knowledge and Imagination cannot Fill the Gap

Can sensory knowledge alone provide us with the connection that is needed for this knowledge of necessity? I would argue that it cannot, since sensory knowledge can give us knowledge only of *contingent* matters of fact, and there is a Veil of Contingency lying between such matters of fact and the necessary features of the essences of the things perceived. David Hume was perhaps the first to posit such a veil explicitly, arguing that we never directly observe the “necessary connections” between matters of fact, but this deficiency of the power of sensory perception was already an implicit element in the Aristotelian and scholastic traditions. We can only perceive directly the proper sensibles of each of our five senses (i.e., colors, sounds, smells, tastes, and tactile qualities). Even when the common sense is included, our sensory knowledge is limited to the actual distribution of these qualities and quantities, which always lies on the near side of the Veil of Contingency.

It is true that the sensory imagination gives us some limited access to information about what is possible or impossible. However, it is clearly at best a fallible guide to possibility, and so not a source of real knowledge. In addition, since we are concerned here about our knowledge of value, the power of imagination by itself cannot provide us with access to the essences of natural things, like human beings. Imagination can reveal facts only about necessities involving only the proper sensibles (colors, smells, sounds) and space and time (Kant's forms of intuition). It cannot, by itself, tell us any of the necessary truths that are foundational to ethics or moral philosophy. This is not to deny that imagination is indispensable in discerning the right thing to do in particular circumstances.

In addition, there is what Aquinas terms the 'estimative' sense of animals (and the corresponding 'cogitative' power of humans), which does give them some limited access to the evaluative dimension of reality, i.e., what is to be sought or avoided, such as: what is edible, dangerous, desirable as a mate, and so on. But again, this does not rise to the level of general and scientific knowledge of objective value. For that, the intellect must be involved. And so, there must be some direct connection between the intellect and the forms to be understood, a connection that does not depend *constitutively* on sense perception or imagination or the estimative sense and so is able to penetrate the Veil of Contingency. I am not denying that such intellectual knowledge depends causally on prior sense experience, as a necessary but not sufficient condition.

3. Human Knowledge *De Necessario*: An Aristotelian Account

Given that there must be some real connection between worldly essences and the human mind for modal and moral knowledge to be possible, we have to consider two possible connections: efficient and formal. The "platonist" (as we may call the first alternative) supposes that essences are mind-independent substances that interact by way of efficient causation with the human mind. The "aristotelian" (to give a label to the opposite view) supposes instead that there is some formal or constitutive relationship between the essences that are the objects of understanding and the acts of human understanding themselves.

The difficulty with the platonic account is that it cannot both attribute understanding to the human mind (as an intrinsic feature of that mind) and

maintain the strong, per se unity of the human person. Either understanding does not belong to the individual human person but to a system composed of that person and external, universal essences, or the human person itself is partly composed of external substances of a universal character. Neither option seems attractive.

If human thoughts are grounded in essences of external things that are not themselves external to the mind, then these essences must function as *accidents* of the human mind. This means that it cannot be numerically the same form of equinity that informs both my act of understanding and yours. Instead, there must be two forms of the same kind or species (namely, equinity). Similarly, the form of equinity in my mind cannot be numerically identical to the form of equinity of any individual horse.

This Aristotelian account immediately faces a problem, noted by Brower and Brower-Toland and by Panaccio. When a form acts as a formal cause of an intellectual act of understanding, it thereby constitutes a *qualitative accident* of the intellect.¹ However, suppose that the form that is understood is a substantial form or an accidental form belonging to one of the other, nonqualitative categories, such as quantity. In these cases, the same kind of form would have to act as a substantial or nonqualitative accidental form in relation to the natural instances of the species, but as a qualitative form in relation to the intellect.

And finally, the intelligible species has the being of an accident in the cognizer. (See SCG I, 46: “*Species intelligibilis in intellectu praeter essentiam eius existens esse accidentale habet.*”) How could an essence [in the category of substance] ever have the being of an accident? (Panaccio, 193)

For according to this theory, concepts represent things in virtue of standing in the relation of formal sameness to them and hence, can be only “about” things that are intrinsically the same as they are. But concepts, as we have seen, are accidental forms falling in the Aristotelian category of Quality,

¹That they are accidents is explicitly stated by Aquinas in the *Summa Theologiae* Part I, Q5, article 4 and *Summa Contra Gentiles* I, 46. Yves Simon writes, “All major Thomists are unanimous in affirming that immanent action is a quality.” (Simon, p. 66, n29) The immanent act of understanding is such an immanent action and does not fall into the Aristotelian category of *action*, since it lacks the essential properties of that category: to exist with motion, and to produce a passion in some patient.

and presumably qualities can only be intrinsically the same as other qualities. (Brower and Brower-Toland, 216)

One possible answer would be that the difference lies in the way in which the forms relate to minds (as objects of understanding) and the way in which they relate to natural instances (outside of the mind). In effect, this would involve two distinct forms of formal causation, one natural and the other intentional. There are two problems with this proposal. First, it very substantially increases the complexity of the theory. We now have really five modes of causation, material, efficient, final, and two distinct modes of formal causation. Second, as Brower and Brower-Toland point out, it isn't clear that the proposal solves the problem. If an intelligible species is always a qualitative form, how could it be of the same species as a nonqualitative form in nature? It would seem to be intrinsically different from such nonqualitative forms, and so not conspecific with them.

After all, if a quality (in this case a concept) is not in itself formally (or intrinsically) the same as any nonqualitative form, how could it suddenly become such merely by being possessed or instantiated in a special way? And what would explain its becoming formally the same as this thing rather than that? (Brower and Brower-Toland, 217)

A better solution to the proposal is this: we insist that the intelligible species can be intrinsically a form of a non-qualitative sort, even though in some sense its informing of the intellect results in an intellectual "quality" of the mind. And, we should insist that it is the very *same* relation of formal causation that relates nonqualitative forms to minds (resulting in intellectual qualities) and to natural instances (resulting in substances, quantities, and other nonqualitative entities). The nonqualitative form that is an intelligible species is a kind of qualitative accident because of the peculiar nature of the thing that it informs, namely, the intellect. The form is received in a way appropriate to the receiver: as a substance or quantity (when received by matter or a material substance), and as an intellectual quality (when received by the intellect).

I think that perhaps the best way of thinking about this is to introduce a third entity into the picture: a qualitative *act of understanding*. This act of understanding is a form in the category of quality and informs the intellect in the same way that other qualities inform their subjects. The nonqualitative intelligible species would not (in my proposal) *directly* inform the intellect.

Rather, it informs the act of understanding, which, in turn, qualitatively informs the intellect.

This still leaves us with a problem: how can the act of understanding (which *ex hypothesi* is an accidental form) be conspecific with substances and nonqualitative accidents, as the Identity Thesis requires? I think the answer is pretty straightforward. An intelligible species is conspecific with some natural form if and only if the two forms are functionally interchangeable, each having, by virtue of its intrinsic character, the potentiality of doing exactly what the other does. My concept of a horse is a form that could, if it were (*per impossibile*) informing some appropriate signate matter, be the substantial form of a real horse, just as the substantial form of any real horse could, if it were (*per impossibile*) informing some act of understanding in my mind, be an intelligible species of equinity in my mind. To put the equivalence in Scotistic terms, the intelligible species of equinity in my mind is distinct from the substantial form of any given horse because of the numerical distinctness of my act of understanding the horse and the signate matter of the natural horse, just as the distinctness of the substantial forms of any two horses is grounded in the distinctness of the two parcels of signate matter.

Aquinas seems to embrace such a theory, when he refers to the intelligible species as the “essential quality” of the thing known. Here is Robert Schmidt’s summary of the Thomistic view:

The form or species received into the intellect is at once the accidental quality of the intellect and the essential quality of the thing known... [Footnote 53 The expression “essential quality” is used *In I Perh.*, 10, n. 10. Accidental and “substantial” quality are contrasted, *In V Met.* 22, n. 1581.] It is at once the form of the intellect and of the thing known, and is therefore similar to the thing known according to its whole intelligible being. (Schmidt, 110)

There is an analogy in Aristotelian thought between the way that color modifies the transparent medium and the way a form informs the intellect’s act of understanding (see Burnyeat 2001). I will offer analogous interpretations of the two cases. In my interpretation of the transmission of color through the air, the form of a color modifies the quality of transparency of the air. The result is transparent air (not colored air) but with the *spiritual* or *intentional* presence of color, a spiritual accident of the air itself. The form of color belongs to the category of quality, but the spiritual accident of color is a second-order quality: a quality of a quality (in this case, a quality of the quality of transparency). When instead a form of color

directly modifies the surface of a body, the result is a body with the quality of color, i.e., a colored body. Color does not modify the air in that way but only indirectly, via modifying the quality of transparency. Therefore, a spiritual change in quality does not require any change in the first-order qualities of the air, and so, as Aquinas teaches, the spiritual change in the transparent medium does not require any natural change (*In II De Anima*, Lectio 14 n418).

Since transparent air lacks any intrinsic color, the quality of transparency is a potential subject of any color whatsoever. Similarly, since the act of understanding is an immaterial act (i.e., an act only of the soul, without a corporeal organ), it is a potential subject of any material form whatsoever (that is, any form whose natural subject is material).

4. Deflationary alternatives to the Identity Thesis

That completes my defense of the Aristotelian and Thomistic doctrine of the formal identity of the intelligible species with natural forms. In this section, I will consider three alternative interpretations of Aquinas on this point, or perhaps we should call them three deflationary interpretations of the Formal Identity Thesis:

1. Formal identity is just similitude, similarity (Panaccio)
2. Formal identity consists merely in causal contact with the world (Pasnau and O'Callaghan).
3. Formal identity is a primitive form of intentionality (Brower and Brower-Toland)

4.1 Formal Identity is Just Similitude (Panaccio)

Claude Panaccio has argued that formal identity is just similitude. If we ask *How does the nature of the thing understood exist in the mind?* Panaccio contends, “The striking thing here is that when Aquinas wants to tackle the question, he inevitably resorts to the idea of mental similarity (similitude) as being explicative in such matters.” (Panaccio, 187) Panaccio cites the Disputed Questions on Truth I, 3: “The intellect forming quiddities has *nothing but a similitude* of the thing existing outside the mind [*Intellectus formans quidditates non habet nisi similitudinem rei existentis extra animam*].” (Panaccio, p. 193)

Panaccio argues:

The very expression ‘forming quiddities’ that could make us think that the quiddities existed somehow in the mind is here entirely explained by – and hence reduced to – similitude, rather than the other way around. (Panaccio, p. 193)

However, as Stump has argued, the relevant notion of similitude is to be understood in terms of the sharing of forms. Things can be similar in many ways: what makes an act of understanding epistemically relevant is that it shares the very same sort of form shared by the natural species being understood.

‘Similitudo’ is cognate with ‘similis’ (the Latin for ‘similar’); and things are similar insofar as they share qualities – or, as Aquinas would say, forms. And so, on his view, ‘similitude is grounded in an agreement in or sharing of forms. Consequently, there are many kinds of similitude, corresponding to the many ways of sharing forms.’ (ST I.4 a.3) See also QDV 8.8: ‘There is similitude between two things insofar as there is agreement in form.’ (Stump, p. 290n5)

4.2 Formal Identity Consists in Mere Causal Contact (Pasnau, O’Callaghan)

Robert Pasnau and John O’Callaghan have suggested that the formal identity of our concepts with extra-mental forms consists simply in their causal contact with that external world.

Aquinas’s claims of a formal identity and a likeness relationship between knower and known are not just unargued assumptions in his theory of knowledge. Rather, these claims should be seen as based on causal facts about the relationship between cognitive agents and the outside world. It’s because external objects make an impression on our sensory organs and (indirectly) on our higher-order faculties that those impressions, under the name ‘species,’ are formally identical to, and are likenesses of, external objects. Formal identity is thus guaranteed by our causal connections with the world.... In the end, formal identity is a matter of something entirely uncontroversial: that our ideas and impressions are caused from without. (Pasnau, p. 105)

O'Callaghan similarly suggests that causation alone is sufficient for the relevant kind of similitude or formal identity:

It is a general principle for St. Thomas that agents act to produce a likeness of themselves in their effects. There is a common but simplistic way of understanding this that renders it manifestly false, namely something like visual or sensual likeness... But St. Thomas does not understand it in this visual way. The character of the effect is determined by the characteristic of the cause relevant to its agency – the pitcher was shattered because the rock was solid and massive, not because it was gray.... The formal character of the effect is determined by the formal character of the cause – that is what the likeness or similitude consists in. (O'Callaghan, p. 228)

However, a causal connection is not, by itself, sufficient to explain our knowledge of the essential truths associated with natural forms, if the causal chain between the natural entities and the mind is interrupted by the Veil of Contingency. If every causal connection is mediated by merely contingent events in the realm of sensibility, then we cannot explain our knowledge of necessary truths. We need a causal connection of some kind (including, possibly, a formal-causal connection) between those natural forms and human judgments.

O'Callaghan adds a factor that might render his account and mine compatible. He suggests that a causally generated “likeness” grounds cognition only because of the nature of the human intellect:

So why is a likeness in a cognitive power, in particular in the intellect, a cognition? Not simply because it is a likeness as such, but because of the character of the recipient of the likeness. The effect is received in the recipient after the mode of being of the recipient, not after the mode of being of the cause or agent. (O'Callaghan, p. 231)

This is correct, so long as we take into account the effect that is produced in these cases includes the fact that the natural form stands in a relation of formal-causation to an act of understanding, a result that does not follow in all cases of efficient causation alone.

4.3 Formal Identity is Just Primitive Intentionality

Jeffrey Brower and Susan Brower-Toland have suggested that, in Aquinas's theory, the understood forms are “present” in the intellect simply because the intellect contains a concept that represents the form. Brower and

Brower-Toland propose that this representation relation is metaphysically primitive or undefinable for Aquinas. They propose,

Whenever Aquinas speaks of the form of some object being intentionally present in the mind, we take this to mean that the form of the object in question is present in the mind via the mind's possession of a concept that represents it." (Brower and Brower-Toland, p. 227) They cite the *Disputed Questions on Truth* 2.3 ad 9: "The likeness can be understood as representation – and this sort of likeness is required between cognizer and cognized.

The textual evidence for this interpretation is inconclusive, and so the hermeneutic question must turn on which proffered theory makes the most sense. I agree with Brower and Brower-Toland (and with Pasnau and others) that the problem of intentionality alone may not be sufficient to take the Formal Identity theory seriously. (However, see Klima 2001a and 2001b, and Ross 2008, for impressive arguments to the contrary.) However, once we take into account the problem of knowledge *de necessario*, the need for the formal action of natures on the mind becomes clear.

What if we tried to amplify the Brower-Brower-Toland account by making the primitive intentionality relation into a formal-causal relation, of the sort that could convey information about necessary essential truths to the mind? There would be two difficulties with such a proposal. First, in terms of economy, it would require a large number of formal-causal connections for each human concept: the concept would have to be simultaneously informed by *all* the natural forms of the same species or genus, and not just by a single form located in the mind. Second, and more importantly, the proposal would run afoul of the anti-Platonic argument in section 3. The mechanisms of human understanding would no longer be entirely intrinsic to the individual human mind. Instead, the subject of understanding, the one who really understands, would comprise the human being together with all of the natural forms intended by that human's thoughts.

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HYLOMORPHISM AND OUR KNOWLEDGE OF VALUE

ROBERT C. KOONS

1. Introduction

Both Aristotle and Thomas Aquinas subscribe to a Formal Identity theory about the relation between the human mind and the extra-mental objects of our understanding. This has been one of the most controversial features of Aristotelian and Thomistic metaphysics of the mind. I offer here a defense of the Formal Identity Thesis and of the immateriality of the human intellect, based on specifically epistemological arguments about our knowledge of necessary or essential truths, including especially essential truths about value.

Rather than speaking in terms of *a priori* vs. *a posteriori*, I will speak of knowledge of necessity (*de necessario*) and knowledge of contingency (*de contingente*). The epistemological problem I will focus on concerns what I call the Veil of Contingency. There is a gap between the set of contingent truths (available in sense perception, memory, and testimony) and the set of necessary truths. The contingent truths about the actual world underdetermine the necessary truths, including necessary truths of mathematics, science, and ethics.

For Aristotelians, the class of necessary truths and the class of truths that are somehow grounded by essences are identical. All necessary truths are essential truths or grounded in essential truths, and all essential truths and all truths grounded in essence are necessary. For similar reasons, the necessary and the “universal” are coterminous. What is universal is necessary, and what is necessary is universal. Merely accidental generalizations do not count as ‘universal’ in the relevant sense.

For Aristotelians, it is abstraction by the active intellect that gives us access to essence, and thereby to *de necessario* knowledge. When the intellect

gains access to a form, that form is “in” the intellect. That is, each concept of an essence is a form, a form belonging to an individual mind and of the same kind as (conspecific with) forms occurring outside the mind in nature. There is a direct causal relation of some kind (I will argue, a *formal* causal connection) between these internal forms and acts of understanding and of judgment by the individual human being. Aquinas and those scholastics who follow him call these internal forms the ‘intelligible species’. According to what I am calling the Formal Identity Thesis, the intelligible species is literally conspecific with the substances or accidents in nature being understood. This thesis is explicitly and notoriously propounded by Aristotle in Book 3 of *De Anima*:

Now as to that part of the soul by which it has both cognition and understanding... it must be something unaffected which yet receives the form and is potentially of the same kind as its object but not the same particular... (Aristotle, p. 201, Book 3, chapter 4)

And indeed there is an intellect characterized by the capacity to become all things, and an intellect characterized by that to bring all things about, and to bring them about in just the way that a state, like light, does. (For in a way, light also makes things that are potentially colours colours in actuality.) (Aristotle, p. 204, Book 3, chapter 5)

I will argue in section 2 that some reification of form is necessary to ground our knowledge of objective value. Then, in section 3, I offer an Aristotelian account of our moral knowledge, in terms of the formal identity of the intellect with its object. I criticize three alternative interpretations of Thomas Aquinas’s Formal Identity Thesis in section 4.

2. Knowledge De Bono: The Need for a Connection

Knowledge of value requires knowledge of necessities. There are two compelling Aristotelian reasons why knowledge of the good must be grounded in the knowledge of specific natures.

1. Since *good* is not a genus (*Summa Contra Gentiles* I, 25, 6 and *De Veritate* 1), we grasp particular goods by understanding them as standing in analogies to one another, modes of perfection of different species. So, it is impossible to gain knowledge of the good except in relation to definite forms. If there were no knowledge of creaturely essences, there would be no knowledge of value. Aquinas

clearly states this argument in the *Summa Theologiae*, Part I, Question 5:

The essence of goodness consists in mode, species, and order.

I answer that, everything is said to be good so far as it is perfect; for in that way only is it desirable (as shown above Articles [1], 3). Now a thing is said to be perfect if it lacks nothing according to the mode of its perfection. But since everything is what it is by its form (and since the form presupposes certain things, and from the form certain things necessarily follow), in order for a thing to be perfect and good it must have a form, together with all that precedes and follows upon that form. Now the form presupposes determination or commensuration of its principles, whether material or efficient, and this is signified by the mode: hence it is said that the measure marks the mode. But the form itself is signified by the species; for everything is placed in its species by its form.... Further, upon the form follows an inclination to the end, or to an action, or something of the sort; for everything, in so far as it is in act, acts and tends towards that which is in accordance with its form; and this belongs to weight and order. Hence the essence of goodness, so far as it consists in perfection, consists also in mode, species and order. (*Summa Theologiae* Part I, Q5, a5)

2. We gain knowledge of the good (and other transcendentals, like *being*, *truth*, and *one*) by *reflection* on the primary acts of the intellect, which must be directed to specific natures (Lonergan, p. 66). For example, what Aquinas says about our understanding of truth in *De Veritate* would apply, *mutatis mutandis*, to our knowledge of the good:

And truth is known by the intellect in view of the fact that the intellect reflects upon its own act – not merely as knowing its own act, but as knowing the proportion of its act to the thing. Now, this proportion cannot be known without knowing the nature of the act; and the nature of the act cannot be known without knowing the nature of the active principle, that is, the intellect itself, to whose nature it belongs to be conformed to things. Consequently, it is because the intellect reflects upon itself that it knows truth. (*De Veritate*, Q1, A9, reply)

Being and goodness are convertible. The good is *being as desired*. A good *F* is an *F* that is perfect in its specific nature. The particular goods are analogously and not univocally related to one another. This means that there is no such thing as *a* or *the* form of the good, whether we think of such a form as a Platonic substance or as an individual form. Our knowledge of the

objective good is dependent on our knowledge of specific natural forms and of their necessary relations of analogy to one another.

How far does this principle of analogy stretch? Are there forms of the being of the categories: i.e., substantial being, quantitative being, qualitative being, etc.? Is there similarly a single form of *good substance* or *good action* or *good quality*? Is it only trans-categorical predications that count as analogical rather than univocal?

I think not. Even within a category, the ways of being are quite different; e.g., the substantial being of a stone is quite different from that of a man, or from that of an angel. Aquinas makes a distinction between the common notion of good and “particular goods” in the *Summa Theologiae* I-II, Q10, a2. As Aquinas states, “Any particular good, insofar as it is lacking some good, can be regarded as non-good.” In article 1 of that question, he makes clear that the will is directed of necessity to a general good (a transcendental) and not to any particular good, which I take to mean that there is no genus of good action or good quality. To be a good action, an action must be good in all respects: object, end, and appropriateness to circumstances, all in accordance with right reason. (*Summa Theologiae* I-II, Q18, a4)

There must be, in addition, a connection between our understanding of essences and forms, on the one hand, and our knowledge of necessary truths, on the other. Our knowledge of necessities is, with one exception, based upon our understanding of the essences involved. (The one exception is that we can infer the necessary existence of God as first cause, without grasping His essence.) Yves Simon describes this connection between essences and necessities:

Consider theoretical science. To the extent that it achieves its ideal, it moves beyond the existential data to concern itself with general types and intelligible laws, or, in other words, with formulae of possibility, with essential necessities. Unsupported by rational analysis, empirical hypotheses derived from factual observations represent an incomplete kind of knowing, indeed, a partial defeat of science. The perfection of theoretical knowledge depends above all on the necessity of its object. Thus every time we manage to abstract from experience to reach a necessary object, our understanding, though bearing now on an object separated from existence, is more perfect than our experimental knowledge, which bears on physical existence alone. (Simon, p. 86)

2.1 A Transcendental Argument

I offer here a transcendental argument for the claim that there must be some connection (either causal or metaphysical) between the appearance of value to us and the essential facts about value. The first is a transcendental argument, with an appeal to something analogous to a causal constraint on knowledge.

1. If there were no connection, causal or constitutive, between our judgments about necessity and the corresponding facts about essences, we would have no knowledge of necessity.
2. We do have such knowledge.
3. Therefore, there is some connection, causal or constitutive, between our judgments of necessity and the corresponding essential facts.

Edmund Gettier's paper (1963) revealed the bankruptcy of defining knowledge in terms of justified true belief. Post-Gettier reflections on knowledge have revealed that, at least in the paradigmatic cases of perception, memory, and testimony, knowledge requires a real connection of some kind between the mental state of knowledge and the facts so known. I argued in *Realism Regained* (Koons 2000) that a similar constraint is also required for our knowledge of the laws of nature, mathematics, and logic (see also Koons 2017 and Koons 2018). John Bengson has recently made a similar argument (Bengson 2015). The key fact is that our intuitive (justified) true beliefs can also be Gettierized.

Suppose that a drug XYZ produces randomized intellectual seemings (or, if you prefer, causes our ordinary rational faculties to generate beliefs with randomized contents). When administered to a group of subjects, it is predictable that 1% end up with true intuitive beliefs, 99% with false ones. Those relying on veridical seemings (or belief-generation) under these circumstances do not gain knowledge, although they may have justified true beliefs (assuming that they don't know about the drug and its effect).

Does this result depend in any way on contingency – that is, on the possibility of a given subject believing differently? Replace the drug with genetic manipulation of human gametes. Given origins essentialism, the 1% that end up with true beliefs might have the disposition toward those beliefs essentially. This is still not good enough for knowledge.

Would it be sufficient if the seemings or dispositions to believe were essential to one's species? I think not: just replace the preceding scenarios

with one in which aliens manipulate the evolutionary history of intelligent species on 100 planets, producing reliably true beliefs in 1, mostly false beliefs in 99, with all 100 species equally adept at reproduction. The one intelligent species with species-wide essential dispositions to true belief still lacks knowledge, because of the lack of a real connection between their seemings and dispositions and the relevant truths (whether those truths are themselves necessary or contingent).

The upshot of these thought experiments is this: knowledge is undermined so long as there are relevantly similar seemings or dispositions that are unreliable with respect to truth, and which had an equal or nearly equal propensity to exist.

What if it were metaphysically impossible for there to exist relevantly similar seemings that are false? I reply: Is this impossibility supposed to be true as a matter of brute necessity? It is hard to believe in such a metaphysical necessity without some ground – a ground that only a real connection can provide. And, in any case, a merely brute necessity is too accidental to provide the needed connection between beliefs and their objects. Counterpossible scenarios in which the brute necessity was violated would be epistemologically relevant.

2.2 Sensory Knowledge and Imagination cannot Fill the Gap

Can sensory knowledge alone provide us with the connection that is needed for this knowledge of necessity? I would argue that it cannot, since sensory knowledge can give us knowledge only of *contingent* matters of fact, and there is a Veil of Contingency lying between such matters of fact and the necessary features of the essences of the things perceived. David Hume was perhaps the first to posit such a veil explicitly, arguing that we never directly observe the “necessary connections” between matters of fact, but this deficiency of the power of sensory perception was already an implicit element in the Aristotelian and scholastic traditions. We can only perceive directly the proper sensibles of each of our five senses (i.e., colors, sounds, smells, tastes, and tactile qualities). Even when the common sense is included, our sensory knowledge is limited to the actual distribution of these qualities and quantities, which always lies on the near side of the Veil of Contingency.

It is true that the sensory imagination gives us some limited access to information about what is possible or impossible. However, it is clearly at best a fallible guide to possibility, and so not a source of real knowledge. In addition, since we are concerned here about our knowledge of value, the power of imagination by itself cannot provide us with access to the essences of natural things, like human beings. Imagination can reveal facts only about necessities involving only the proper sensibles (colors, smells, sounds) and space and time (Kant's forms of intuition). It cannot, by itself, tell us any of the necessary truths that are foundational to ethics or moral philosophy. This is not to deny that imagination is indispensable in discerning the right thing to do in particular circumstances.

In addition, there is what Aquinas terms the 'estimative' sense of animals (and the corresponding 'cogitative' power of humans), which does give them some limited access to the evaluative dimension of reality, i.e., what is to be sought or avoided, such as: what is edible, dangerous, desirable as a mate, and so on. But again, this does not rise to the level of general and scientific knowledge of objective value. For that, the intellect must be involved. And so, there must be some direct connection between the intellect and the forms to be understood, a connection that does not depend *constitutively* on sense perception or imagination or the estimative sense and so is able to penetrate the Veil of Contingency. I am not denying that such intellectual knowledge depends causally on prior sense experience, as a necessary but not sufficient condition.

3. Human Knowledge *De Necessario*: An Aristotelian Account

Given that there must be some real connection between worldly essences and the human mind for modal and moral knowledge to be possible, we have to consider two possible connections: efficient and formal. The "platonist" (as we may call the first alternative) supposes that essences are mind-independent substances that interact by way of efficient causation with the human mind. The "aristotelian" (to give a label to the opposite view) supposes instead that there is some formal or constitutive relationship between the essences that are the objects of understanding and the acts of human understanding themselves.

The difficulty with the platonic account is that it cannot both attribute understanding to the human mind (as an intrinsic feature of that mind) and

maintain the strong, per se unity of the human person. Either understanding does not belong to the individual human person but to a system composed of that person and external, universal essences, or the human person itself is partly composed of external substances of a universal character. Neither option seems attractive.

If human thoughts are grounded in essences of external things that are not themselves external to the mind, then these essences must function as *accidents* of the human mind. This means that it cannot be numerically the same form of equinity that informs both my act of understanding and yours. Instead, there must be two forms of the same kind or species (namely, equinity). Similarly, the form of equinity in my mind cannot be numerically identical to the form of equinity of any individual horse.

This Aristotelian account immediately faces a problem, noted by Brower and Brower-Toland and by Panaccio. When a form acts as a formal cause of an intellectual act of understanding, it thereby constitutes a *qualitative accident* of the intellect.¹ However, suppose that the form that is understood is a substantial form or an accidental form belonging to one of the other, nonqualitative categories, such as quantity. In these cases, the same kind of form would have to act as a substantial or nonqualitative accidental form in relation to the natural instances of the species, but as a qualitative form in relation to the intellect.

And finally, the intelligible species has the being of an accident in the cognizer. (See SCG I, 46: “*Species intelligibilis in intellectu praeter essentiam eius existens esse accidentale habet.*”) How could an essence [in the category of substance] ever have the being of an accident? (Panaccio, 193)

For according to this theory, concepts represent things in virtue of standing in the relation of formal sameness to them and hence, can be only “about” things that are intrinsically the same as they are. But concepts, as we have seen, are accidental forms falling in the Aristotelian category of Quality,

¹That they are accidents is explicitly stated by Aquinas in the *Summa Theologiae* Part I, Q5, article 4 and *Summa Contra Gentiles* I, 46. Yves Simon writes, “All major Thomists are unanimous in affirming that immanent action is a quality.” (Simon, p. 66, n29) The immanent act of understanding is such an immanent action and does not fall into the Aristotelian category of *action*, since it lacks the essential properties of that category: to exist with motion, and to produce a passion in some patient.

and presumably qualities can only be intrinsically the same as other qualities. (Brower and Brower-Toland, 216)

One possible answer would be that the difference lies in the way in which the forms relate to minds (as objects of understanding) and the way in which they relate to natural instances (outside of the mind). In effect, this would involve two distinct forms of formal causation, one natural and the other intentional. There are two problems with this proposal. First, it very substantially increases the complexity of the theory. We now have really five modes of causation, material, efficient, final, and two distinct modes of formal causation. Second, as Brower and Brower-Toland point out, it isn't clear that the proposal solves the problem. If an intelligible species is always a qualitative form, how could it be of the same species as a nonqualitative form in nature? It would seem to be intrinsically different from such nonqualitative forms, and so not conspecific with them.

After all, if a quality (in this case a concept) is not in itself formally (or intrinsically) the same as any nonqualitative form, how could it suddenly become such merely by being possessed or instantiated in a special way? And what would explain its becoming formally the same as this thing rather than that? (Brower and Brower-Toland, 217)

A better solution to the proposal is this: we insist that the intelligible species can be intrinsically a form of a non-qualitative sort, even though in some sense its informing of the intellect results in an intellectual "quality" of the mind. And, we should insist that it is the very *same* relation of formal causation that relates nonqualitative forms to minds (resulting in intellectual qualities) and to natural instances (resulting in substances, quantities, and other nonqualitative entities). The nonqualitative form that is an intelligible species is a kind of qualitative accident because of the peculiar nature of the thing that it informs, namely, the intellect. The form is received in a way appropriate to the receiver: as a substance or quantity (when received by matter or a material substance), and as an intellectual quality (when received by the intellect).

I think that perhaps the best way of thinking about this is to introduce a third entity into the picture: a qualitative *act of understanding*. This act of understanding is a form in the category of quality and informs the intellect in the same way that other qualities inform their subjects. The nonqualitative intelligible species would not (in my proposal) *directly* inform the intellect.

Rather, it informs the act of understanding, which, in turn, qualitatively informs the intellect.

This still leaves us with a problem: how can the act of understanding (which *ex hypothesi* is an accidental form) be conspecific with substances and nonqualitative accidents, as the Identity Thesis requires? I think the answer is pretty straightforward. An intelligible species is conspecific with some natural form if and only if the two forms are functionally interchangeable, each having, by virtue of its intrinsic character, the potentiality of doing exactly what the other does. My concept of a horse is a form that could, if it were (*per impossibile*) informing some appropriate signate matter, be the substantial form of a real horse, just as the substantial form of any real horse could, if it were (*per impossibile*) informing some act of understanding in my mind, be an intelligible species of equinity in my mind. To put the equivalence in Scotistic terms, the intelligible species of equinity in my mind is distinct from the substantial form of any given horse because of the numerical distinctness of my act of understanding the horse and the signate matter of the natural horse, just as the distinctness of the substantial forms of any two horses is grounded in the distinctness of the two parcels of signate matter.

Aquinas seems to embrace such a theory, when he refers to the intelligible species as the “essential quality” of the thing known. Here is Robert Schmidt’s summary of the Thomistic view:

The form or species received into the intellect is at once the accidental quality of the intellect and the essential quality of the thing known... [Footnote 53 The expression “essential quality” is used *In I Perh.*, 10, n. 10. Accidental and “substantial” quality are contrasted, *In V Met.* 22, n. 1581.] It is at once the form of the intellect and of the thing known, and is therefore similar to the thing known according to its whole intelligible being. (Schmidt, 110)

There is an analogy in Aristotelian thought between the way that color modifies the transparent medium and the way a form informs the intellect’s act of understanding (see Burnyeat 2001). I will offer analogous interpretations of the two cases. In my interpretation of the transmission of color through the air, the form of a color modifies the quality of transparency of the air. The result is transparent air (not colored air) but with the *spiritual* or *intentional* presence of color, a spiritual accident of the air itself. The form of color belongs to the category of quality, but the spiritual accident of color is a second-order quality: a quality of a quality (in this case, a quality of the quality of transparency). When instead a form of color

directly modifies the surface of a body, the result is a body with the quality of color, i.e., a colored body. Color does not modify the air in that way but only indirectly, via modifying the quality of transparency. Therefore, a spiritual change in quality does not require any change in the first-order qualities of the air, and so, as Aquinas teaches, the spiritual change in the transparent medium does not require any natural change (*In II De Anima*, Lectio 14 n418).

Since transparent air lacks any intrinsic color, the quality of transparency is a potential subject of any color whatsoever. Similarly, since the act of understanding is an immaterial act (i.e., an act only of the soul, without a corporeal organ), it is a potential subject of any material form whatsoever (that is, any form whose natural subject is material).

4. Deflationary alternatives to the Identity Thesis

That completes my defense of the Aristotelian and Thomistic doctrine of the formal identity of the intelligible species with natural forms. In this section, I will consider three alternative interpretations of Aquinas on this point, or perhaps we should call them three deflationary interpretations of the Formal Identity Thesis:

1. Formal identity is just similitude, similarity (Panaccio)
2. Formal identity consists merely in causal contact with the world (Pasnau and O'Callaghan).
3. Formal identity is a primitive form of intentionality (Brower and Brower-Toland)

4.1 Formal Identity is Just Similitude (Panaccio)

Claude Panaccio has argued that formal identity is just similitude. If we ask *How does the nature of the thing understood exist in the mind?* Panaccio contends, “The striking thing here is that when Aquinas wants to tackle the question, he inevitably resorts to the idea of mental similarity (similitude) as being explicative in such matters.” (Panaccio, 187) Panaccio cites the Disputed Questions on Truth I, 3: “The intellect forming quiddities has *nothing but a similitude* of the thing existing outside the mind [*Intellectus formans quidditates non habet nisi similitudinem rei existentis extra animam*].” (Panaccio, p. 193)

Panaccio argues:

The very expression ‘forming quiddities’ that could make us think that the quiddities existed somehow in the mind is here entirely explained by – and hence reduced to – similitude, rather than the other way around. (Panaccio, p. 193)

However, as Stump has argued, the relevant notion of similitude is to be understood in terms of the sharing of forms. Things can be similar in many ways: what makes an act of understanding epistemically relevant is that it shares the very same sort of form shared by the natural species being understood.

‘Similitudo’ is cognate with ‘similis’ (the Latin for ‘similar’); and things are similar insofar as they share qualities – or, as Aquinas would say, forms. And so, on his view, ‘similitude is grounded in an agreement in or sharing of forms. Consequently, there are many kinds of similitude, corresponding to the many ways of sharing forms.’ (ST I.4 a.3) See also QDV 8.8: ‘There is similitude between two things insofar as there is agreement in form.’ (Stump, p. 290n5)

4.2 Formal Identity Consists in Mere Causal Contact (Pasnau, O’Callaghan)

Robert Pasnau and John O’Callaghan have suggested that the formal identity of our concepts with extra-mental forms consists simply in their causal contact with that external world.

Aquinas’s claims of a formal identity and a likeness relationship between knower and known are not just unargued assumptions in his theory of knowledge. Rather, these claims should be seen as based on causal facts about the relationship between cognitive agents and the outside world. It’s because external objects make an impression on our sensory organs and (indirectly) on our higher-order faculties that those impressions, under the name ‘species,’ are formally identical to, and are likenesses of, external objects. Formal identity is thus guaranteed by our causal connections with the world.... In the end, formal identity is a matter of something entirely uncontroversial: that our ideas and impressions are caused from without. (Pasnau, p. 105)

O'Callaghan similarly suggests that causation alone is sufficient for the relevant kind of similitude or formal identity:

It is a general principle for St. Thomas that agents act to produce a likeness of themselves in their effects. There is a common but simplistic way of understanding this that renders it manifestly false, namely something like visual or sensual likeness... But St. Thomas does not understand it in this visual way. The character of the effect is determined by the characteristic of the cause relevant to its agency – the pitcher was shattered because the rock was solid and massive, not because it was gray.... The formal character of the effect is determined by the formal character of the cause – that is what the likeness or similitude consists in. (O'Callaghan, p. 228)

However, a causal connection is not, by itself, sufficient to explain our knowledge of the essential truths associated with natural forms, if the causal chain between the natural entities and the mind is interrupted by the Veil of Contingency. If every causal connection is mediated by merely contingent events in the realm of sensibility, then we cannot explain our knowledge of necessary truths. We need a causal connection of some kind (including, possibly, a formal-causal connection) between those natural forms and human judgments.

O'Callaghan adds a factor that might render his account and mine compatible. He suggests that a causally generated “likeness” grounds cognition only because of the nature of the human intellect:

So why is a likeness in a cognitive power, in particular in the intellect, a cognition? Not simply because it is a likeness as such, but because of the character of the recipient of the likeness. The effect is received in the recipient after the mode of being of the recipient, not after the mode of being of the cause or agent. (O'Callaghan, p. 231)

This is correct, so long as we take into account the effect that is produced in these cases includes the fact that the natural form stands in a relation of formal-causation to an act of understanding, a result that does not follow in all cases of efficient causation alone.

4.3 Formal Identity is Just Primitive Intentionality

Jeffrey Brower and Susan Brower-Toland have suggested that, in Aquinas's theory, the understood forms are “present” in the intellect simply because the intellect contains a concept that represents the form. Brower and

Brower-Toland propose that this representation relation is metaphysically primitive or undefinable for Aquinas. They propose,

Whenever Aquinas speaks of the form of some object being intentionally present in the mind, we take this to mean that the form of the object in question is present in the mind via the mind's possession of a concept that represents it." (Brower and Brower-Toland, p. 227) They cite the *Disputed Questions on Truth* 2.3 ad 9: "The likeness can be understood as representation – and this sort of likeness is required between cognizer and cognized.

The textual evidence for this interpretation is inconclusive, and so the hermeneutic question must turn on which proffered theory makes the most sense. I agree with Brower and Brower-Toland (and with Pasnau and others) that the problem of intentionality alone may not be sufficient to take the Formal Identity theory seriously. (However, see Klima 2001a and 2001b, and Ross 2008, for impressive arguments to the contrary.) However, once we take into account the problem of knowledge *de necessario*, the need for the formal action of natures on the mind becomes clear.

What if we tried to amplify the Brower-Brower-Toland account by making the primitive intentionality relation into a formal-causal relation, of the sort that could convey information about necessary essential truths to the mind? There would be two difficulties with such a proposal. First, in terms of economy, it would require a large number of formal-causal connections for each human concept: the concept would have to be simultaneously informed by *all* the natural forms of the same species or genus, and not just by a single form located in the mind. Second, and more importantly, the proposal would run afoul of the anti-Platonic argument in section 3. The mechanisms of human understanding would no longer be entirely intrinsic to the individual human mind. Instead, the subject of understanding, the one who really understands, would comprise the human being together with all of the natural forms intended by that human's thoughts.

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HYLOMORPHISM AND OUR KNOWLEDGE OF VALUE

ROBERT C. KOONS

1. Introduction

Both Aristotle and Thomas Aquinas subscribe to a Formal Identity theory about the relation between the human mind and the extra-mental objects of our understanding. This has been one of the most controversial features of Aristotelian and Thomistic metaphysics of the mind. I offer here a defense of the Formal Identity Thesis and of the immateriality of the human intellect, based on specifically epistemological arguments about our knowledge of necessary or essential truths, including especially essential truths about value.

Rather than speaking in terms of *a priori* vs. *a posteriori*, I will speak of knowledge of necessity (*de necessario*) and knowledge of contingency (*de contingente*). The epistemological problem I will focus on concerns what I call the Veil of Contingency. There is a gap between the set of contingent truths (available in sense perception, memory, and testimony) and the set of necessary truths. The contingent truths about the actual world underdetermine the necessary truths, including necessary truths of mathematics, science, and ethics.

For Aristotelians, the class of necessary truths and the class of truths that are somehow grounded by essences are identical. All necessary truths are essential truths or grounded in essential truths, and all essential truths and all truths grounded in essence are necessary. For similar reasons, the necessary and the “universal” are coterminous. What is universal is necessary, and what is necessary is universal. Merely accidental generalizations do not count as ‘universal’ in the relevant sense.

For Aristotelians, it is abstraction by the active intellect that gives us access to essence, and thereby to *de necessario* knowledge. When the intellect

gains access to a form, that form is “in” the intellect. That is, each concept of an essence is a form, a form belonging to an individual mind and of the same kind as (conspecific with) forms occurring outside the mind in nature. There is a direct causal relation of some kind (I will argue, a *formal* causal connection) between these internal forms and acts of understanding and of judgment by the individual human being. Aquinas and those scholastics who follow him call these internal forms the ‘intelligible species’. According to what I am calling the Formal Identity Thesis, the intelligible species is literally conspecific with the substances or accidents in nature being understood. This thesis is explicitly and notoriously propounded by Aristotle in Book 3 of *De Anima*:

Now as to that part of the soul by which it has both cognition and understanding... it must be something unaffected which yet receives the form and is potentially of the same kind as its object but not the same particular... (Aristotle, p. 201, Book 3, chapter 4)

And indeed there is an intellect characterized by the capacity to become all things, and an intellect characterized by that to bring all things about, and to bring them about in just the way that a state, like light, does. (For in a way, light also makes things that are potentially colours colours in actuality.) (Aristotle, p. 204, Book 3, chapter 5)

I will argue in section 2 that some reification of form is necessary to ground our knowledge of objective value. Then, in section 3, I offer an Aristotelian account of our moral knowledge, in terms of the formal identity of the intellect with its object. I criticize three alternative interpretations of Thomas Aquinas’s Formal Identity Thesis in section 4.

2. Knowledge De Bono: The Need for a Connection

Knowledge of value requires knowledge of necessities. There are two compelling Aristotelian reasons why knowledge of the good must be grounded in the knowledge of specific natures.

1. Since *good* is not a genus (*Summa Contra Gentiles* I, 25, 6 and *De Veritate* 1), we grasp particular goods by understanding them as standing in analogies to one another, modes of perfection of different species. So, it is impossible to gain knowledge of the good except in relation to definite forms. If there were no knowledge of creaturely essences, there would be no knowledge of value. Aquinas

clearly states this argument in the *Summa Theologiae*, Part I, Question 5:

The essence of goodness consists in mode, species, and order.

I answer that, everything is said to be good so far as it is perfect; for in that way only is it desirable (as shown above Articles [1], 3). Now a thing is said to be perfect if it lacks nothing according to the mode of its perfection. But since everything is what it is by its form (and since the form presupposes certain things, and from the form certain things necessarily follow), in order for a thing to be perfect and good it must have a form, together with all that precedes and follows upon that form. Now the form presupposes determination or commensuration of its principles, whether material or efficient, and this is signified by the mode: hence it is said that the measure marks the mode. But the form itself is signified by the species; for everything is placed in its species by its form.... Further, upon the form follows an inclination to the end, or to an action, or something of the sort; for everything, in so far as it is in act, acts and tends towards that which is in accordance with its form; and this belongs to weight and order. Hence the essence of goodness, so far as it consists in perfection, consists also in mode, species and order. (*Summa Theologiae* Part I, Q5, a5)

2. We gain knowledge of the good (and other transcendentals, like *being*, *truth*, and *one*) by *reflection* on the primary acts of the intellect, which must be directed to specific natures (Lonergan, p. 66). For example, what Aquinas says about our understanding of truth in *De Veritate* would apply, *mutatis mutandis*, to our knowledge of the good:

And truth is known by the intellect in view of the fact that the intellect reflects upon its own act – not merely as knowing its own act, but as knowing the proportion of its act to the thing. Now, this proportion cannot be known without knowing the nature of the act; and the nature of the act cannot be known without knowing the nature of the active principle, that is, the intellect itself, to whose nature it belongs to be conformed to things. Consequently, it is because the intellect reflects upon itself that it knows truth. (*De Veritate*, Q1, A9, reply)

Being and goodness are convertible. The good is *being as desired*. A good *F* is an *F* that is perfect in its specific nature. The particular goods are analogously and not univocally related to one another. This means that there is no such thing as *a* or *the* form of the good, whether we think of such a form as a Platonic substance or as an individual form. Our knowledge of the

objective good is dependent on our knowledge of specific natural forms and of their necessary relations of analogy to one another.

How far does this principle of analogy stretch? Are there forms of the being of the categories: i.e., substantial being, quantitative being, qualitative being, etc.? Is there similarly a single form of *good substance* or *good action* or *good quality*? Is it only trans-categorical predications that count as analogical rather than univocal?

I think not. Even within a category, the ways of being are quite different; e.g., the substantial being of a stone is quite different from that of a man, or from that of an angel. Aquinas makes a distinction between the common notion of good and “particular goods” in the *Summa Theologiae* I-II, Q10, a2. As Aquinas states, “Any particular good, insofar as it is lacking some good, can be regarded as non-good.” In article 1 of that question, he makes clear that the will is directed of necessity to a general good (a transcendental) and not to any particular good, which I take to mean that there is no genus of good action or good quality. To be a good action, an action must be good in all respects: object, end, and appropriateness to circumstances, all in accordance with right reason. (*Summa Theologiae* I-II, Q18, a4)

There must be, in addition, a connection between our understanding of essences and forms, on the one hand, and our knowledge of necessary truths, on the other. Our knowledge of necessities is, with one exception, based upon our understanding of the essences involved. (The one exception is that we can infer the necessary existence of God as first cause, without grasping His essence.) Yves Simon describes this connection between essences and necessities:

Consider theoretical science. To the extent that it achieves its ideal, it moves beyond the existential data to concern itself with general types and intelligible laws, or, in other words, with formulae of possibility, with essential necessities. Unsupported by rational analysis, empirical hypotheses derived from factual observations represent an incomplete kind of knowing, indeed, a partial defeat of science. The perfection of theoretical knowledge depends above all on the necessity of its object. Thus every time we manage to abstract from experience to reach a necessary object, our understanding, though bearing now on an object separated from existence, is more perfect than our experimental knowledge, which bears on physical existence alone. (Simon, p. 86)

2.1 A Transcendental Argument

I offer here a transcendental argument for the claim that there must be some connection (either causal or metaphysical) between the appearance of value to us and the essential facts about value. The first is a transcendental argument, with an appeal to something analogous to a causal constraint on knowledge.

1. If there were no connection, causal or constitutive, between our judgments about necessity and the corresponding facts about essences, we would have no knowledge of necessity.
2. We do have such knowledge.
3. Therefore, there is some connection, causal or constitutive, between our judgments of necessity and the corresponding essential facts.

Edmund Gettier's paper (1963) revealed the bankruptcy of defining knowledge in terms of justified true belief. Post-Gettier reflections on knowledge have revealed that, at least in the paradigmatic cases of perception, memory, and testimony, knowledge requires a real connection of some kind between the mental state of knowledge and the facts so known. I argued in *Realism Regained* (Koons 2000) that a similar constraint is also required for our knowledge of the laws of nature, mathematics, and logic (see also Koons 2017 and Koons 2018). John Bengson has recently made a similar argument (Bengson 2015). The key fact is that our intuitive (justified) true beliefs can also be Gettierized.

Suppose that a drug XYZ produces randomized intellectual seemings (or, if you prefer, causes our ordinary rational faculties to generate beliefs with randomized contents). When administered to a group of subjects, it is predictable that 1% end up with true intuitive beliefs, 99% with false ones. Those relying on veridical seemings (or belief-generation) under these circumstances do not gain knowledge, although they may have justified true beliefs (assuming that they don't know about the drug and its effect).

Does this result depend in any way on contingency – that is, on the possibility of a given subject believing differently? Replace the drug with genetic manipulation of human gametes. Given origins essentialism, the 1% that end up with true beliefs might have the disposition toward those beliefs essentially. This is still not good enough for knowledge.

Would it be sufficient if the seemings or dispositions to believe were essential to one's species? I think not: just replace the preceding scenarios

with one in which aliens manipulate the evolutionary history of intelligent species on 100 planets, producing reliably true beliefs in 1, mostly false beliefs in 99, with all 100 species equally adept at reproduction. The one intelligent species with species-wide essential dispositions to true belief still lacks knowledge, because of the lack of a real connection between their seemings and dispositions and the relevant truths (whether those truths are themselves necessary or contingent).

The upshot of these thought experiments is this: knowledge is undermined so long as there are relevantly similar seemings or dispositions that are unreliable with respect to truth, and which had an equal or nearly equal propensity to exist.

What if it were metaphysically impossible for there to exist relevantly similar seemings that are false? I reply: Is this impossibility supposed to be true as a matter of brute necessity? It is hard to believe in such a metaphysical necessity without some ground – a ground that only a real connection can provide. And, in any case, a merely brute necessity is too accidental to provide the needed connection between beliefs and their objects. Counterpossible scenarios in which the brute necessity was violated would be epistemologically relevant.

2.2 Sensory Knowledge and Imagination cannot Fill the Gap

Can sensory knowledge alone provide us with the connection that is needed for this knowledge of necessity? I would argue that it cannot, since sensory knowledge can give us knowledge only of *contingent* matters of fact, and there is a Veil of Contingency lying between such matters of fact and the necessary features of the essences of the things perceived. David Hume was perhaps the first to posit such a veil explicitly, arguing that we never directly observe the “necessary connections” between matters of fact, but this deficiency of the power of sensory perception was already an implicit element in the Aristotelian and scholastic traditions. We can only perceive directly the proper sensibles of each of our five senses (i.e., colors, sounds, smells, tastes, and tactile qualities). Even when the common sense is included, our sensory knowledge is limited to the actual distribution of these qualities and quantities, which always lies on the near side of the Veil of Contingency.

It is true that the sensory imagination gives us some limited access to information about what is possible or impossible. However, it is clearly at best a fallible guide to possibility, and so not a source of real knowledge. In addition, since we are concerned here about our knowledge of value, the power of imagination by itself cannot provide us with access to the essences of natural things, like human beings. Imagination can reveal facts only about necessities involving only the proper sensibles (colors, smells, sounds) and space and time (Kant's forms of intuition). It cannot, by itself, tell us any of the necessary truths that are foundational to ethics or moral philosophy. This is not to deny that imagination is indispensable in discerning the right thing to do in particular circumstances.

In addition, there is what Aquinas terms the 'estimative' sense of animals (and the corresponding 'cogitative' power of humans), which does give them some limited access to the evaluative dimension of reality, i.e., what is to be sought or avoided, such as: what is edible, dangerous, desirable as a mate, and so on. But again, this does not rise to the level of general and scientific knowledge of objective value. For that, the intellect must be involved. And so, there must be some direct connection between the intellect and the forms to be understood, a connection that does not depend *constitutively* on sense perception or imagination or the estimative sense and so is able to penetrate the Veil of Contingency. I am not denying that such intellectual knowledge depends causally on prior sense experience, as a necessary but not sufficient condition.

3. Human Knowledge *De Necessario*: An Aristotelian Account

Given that there must be some real connection between worldly essences and the human mind for modal and moral knowledge to be possible, we have to consider two possible connections: efficient and formal. The "platonist" (as we may call the first alternative) supposes that essences are mind-independent substances that interact by way of efficient causation with the human mind. The "aristotelian" (to give a label to the opposite view) supposes instead that there is some formal or constitutive relationship between the essences that are the objects of understanding and the acts of human understanding themselves.

The difficulty with the platonic account is that it cannot both attribute understanding to the human mind (as an intrinsic feature of that mind) and

maintain the strong, per se unity of the human person. Either understanding does not belong to the individual human person but to a system composed of that person and external, universal essences, or the human person itself is partly composed of external substances of a universal character. Neither option seems attractive.

If human thoughts are grounded in essences of external things that are not themselves external to the mind, then these essences must function as *accidents* of the human mind. This means that it cannot be numerically the same form of equinity that informs both my act of understanding and yours. Instead, there must be two forms of the same kind or species (namely, equinity). Similarly, the form of equinity in my mind cannot be numerically identical to the form of equinity of any individual horse.

This Aristotelian account immediately faces a problem, noted by Brower and Brower-Toland and by Panaccio. When a form acts as a formal cause of an intellectual act of understanding, it thereby constitutes a *qualitative accident* of the intellect.¹ However, suppose that the form that is understood is a substantial form or an accidental form belonging to one of the other, nonqualitative categories, such as quantity. In these cases, the same kind of form would have to act as a substantial or nonqualitative accidental form in relation to the natural instances of the species, but as a qualitative form in relation to the intellect.

And finally, the intelligible species has the being of an accident in the cognizer. (See SCG I, 46: “*Species intelligibilis in intellectu praeter essentiam eius existens esse accidentale habet.*”) How could an essence [in the category of substance] ever have the being of an accident? (Panaccio, 193)

For according to this theory, concepts represent things in virtue of standing in the relation of formal sameness to them and hence, can be only “about” things that are intrinsically the same as they are. But concepts, as we have seen, are accidental forms falling in the Aristotelian category of Quality,

¹That they are accidents is explicitly stated by Aquinas in the *Summa Theologiae* Part I, Q5, article 4 and *Summa Contra Gentiles* I, 46. Yves Simon writes, “All major Thomists are unanimous in affirming that immanent action is a quality.” (Simon, p. 66, n29) The immanent act of understanding is such an immanent action and does not fall into the Aristotelian category of *action*, since it lacks the essential properties of that category: to exist with motion, and to produce a passion in some patient.

and presumably qualities can only be intrinsically the same as other qualities. (Brower and Brower-Toland, 216)

One possible answer would be that the difference lies in the way in which the forms relate to minds (as objects of understanding) and the way in which they relate to natural instances (outside of the mind). In effect, this would involve two distinct forms of formal causation, one natural and the other intentional. There are two problems with this proposal. First, it very substantially increases the complexity of the theory. We now have really five modes of causation, material, efficient, final, and two distinct modes of formal causation. Second, as Brower and Brower-Toland point out, it isn't clear that the proposal solves the problem. If an intelligible species is always a qualitative form, how could it be of the same species as a nonqualitative form in nature? It would seem to be intrinsically different from such nonqualitative forms, and so not conspecific with them.

After all, if a quality (in this case a concept) is not in itself formally (or intrinsically) the same as any nonqualitative form, how could it suddenly become such merely by being possessed or instantiated in a special way? And what would explain its becoming formally the same as this thing rather than that? (Brower and Brower-Toland, 217)

A better solution to the proposal is this: we insist that the intelligible species can be intrinsically a form of a non-qualitative sort, even though in some sense its informing of the intellect results in an intellectual "quality" of the mind. And, we should insist that it is the very *same* relation of formal causation that relates nonqualitative forms to minds (resulting in intellectual qualities) and to natural instances (resulting in substances, quantities, and other nonqualitative entities). The nonqualitative form that is an intelligible species is a kind of qualitative accident because of the peculiar nature of the thing that it informs, namely, the intellect. The form is received in a way appropriate to the receiver: as a substance or quantity (when received by matter or a material substance), and as an intellectual quality (when received by the intellect).

I think that perhaps the best way of thinking about this is to introduce a third entity into the picture: a qualitative *act of understanding*. This act of understanding is a form in the category of quality and informs the intellect in the same way that other qualities inform their subjects. The nonqualitative intelligible species would not (in my proposal) *directly* inform the intellect.

Rather, it informs the act of understanding, which, in turn, qualitatively informs the intellect.

This still leaves us with a problem: how can the act of understanding (which *ex hypothesi* is an accidental form) be conspecific with substances and nonqualitative accidents, as the Identity Thesis requires? I think the answer is pretty straightforward. An intelligible species is conspecific with some natural form if and only if the two forms are functionally interchangeable, each having, by virtue of its intrinsic character, the potentiality of doing exactly what the other does. My concept of a horse is a form that could, if it were (*per impossibile*) informing some appropriate signate matter, be the substantial form of a real horse, just as the substantial form of any real horse could, if it were (*per impossibile*) informing some act of understanding in my mind, be an intelligible species of equinity in my mind. To put the equivalence in Scotistic terms, the intelligible species of equinity in my mind is distinct from the substantial form of any given horse because of the numerical distinctness of my act of understanding the horse and the signate matter of the natural horse, just as the distinctness of the substantial forms of any two horses is grounded in the distinctness of the two parcels of signate matter.

Aquinas seems to embrace such a theory, when he refers to the intelligible species as the “essential quality” of the thing known. Here is Robert Schmidt’s summary of the Thomistic view:

The form or species received into the intellect is at once the accidental quality of the intellect and the essential quality of the thing known... [Footnote 53 The expression “essential quality” is used *In I Perh.*, 10, n. 10. Accidental and “substantial” quality are contrasted, *In V Met.* 22, n. 1581.] It is at once the form of the intellect and of the thing known, and is therefore similar to the thing known according to its whole intelligible being. (Schmidt, 110)

There is an analogy in Aristotelian thought between the way that color modifies the transparent medium and the way a form informs the intellect’s act of understanding (see Burnyeat 2001). I will offer analogous interpretations of the two cases. In my interpretation of the transmission of color through the air, the form of a color modifies the quality of transparency of the air. The result is transparent air (not colored air) but with the *spiritual* or *intentional* presence of color, a spiritual accident of the air itself. The form of color belongs to the category of quality, but the spiritual accident of color is a second-order quality: a quality of a quality (in this case, a quality of the quality of transparency). When instead a form of color

directly modifies the surface of a body, the result is a body with the quality of color, i.e., a colored body. Color does not modify the air in that way but only indirectly, via modifying the quality of transparency. Therefore, a spiritual change in quality does not require any change in the first-order qualities of the air, and so, as Aquinas teaches, the spiritual change in the transparent medium does not require any natural change (*In II De Anima*, Lectio 14 n418).

Since transparent air lacks any intrinsic color, the quality of transparency is a potential subject of any color whatsoever. Similarly, since the act of understanding is an immaterial act (i.e., an act only of the soul, without a corporeal organ), it is a potential subject of any material form whatsoever (that is, any form whose natural subject is material).

4. Deflationary alternatives to the Identity Thesis

That completes my defense of the Aristotelian and Thomistic doctrine of the formal identity of the intelligible species with natural forms. In this section, I will consider three alternative interpretations of Aquinas on this point, or perhaps we should call them three deflationary interpretations of the Formal Identity Thesis:

1. Formal identity is just similitude, similarity (Panaccio)
2. Formal identity consists merely in causal contact with the world (Pasnau and O'Callaghan).
3. Formal identity is a primitive form of intentionality (Brower and Brower-Toland)

4.1 Formal Identity is Just Similitude (Panaccio)

Claude Panaccio has argued that formal identity is just similitude. If we ask *How does the nature of the thing understood exist in the mind?* Panaccio contends, “The striking thing here is that when Aquinas wants to tackle the question, he inevitably resorts to the idea of mental similarity (similitude) as being explicative in such matters.” (Panaccio, 187) Panaccio cites the Disputed Questions on Truth I, 3: “The intellect forming quiddities has *nothing but a similitude* of the thing existing outside the mind [*Intellectus formans quidditates non habet nisi similitudinem rei existentis extra animam*].” (Panaccio, p. 193)

Panaccio argues:

The very expression ‘forming quiddities’ that could make us think that the quiddities existed somehow in the mind is here entirely explained by – and hence reduced to – similitude, rather than the other way around. (Panaccio, p. 193)

However, as Stump has argued, the relevant notion of similitude is to be understood in terms of the sharing of forms. Things can be similar in many ways: what makes an act of understanding epistemically relevant is that it shares the very same sort of form shared by the natural species being understood.

‘Similitudo’ is cognate with ‘similis’ (the Latin for ‘similar’); and things are similar insofar as they share qualities – or, as Aquinas would say, forms. And so, on his view, ‘similitude is grounded in an agreement in or sharing of forms. Consequently, there are many kinds of similitude, corresponding to the many ways of sharing forms.’ (ST I.4 a.3) See also QDV 8.8: ‘There is similitude between two things insofar as there is agreement in form.’ (Stump, p. 290n5)

4.2 Formal Identity Consists in Mere Causal Contact (Pasnau, O’Callaghan)

Robert Pasnau and John O’Callaghan have suggested that the formal identity of our concepts with extra-mental forms consists simply in their causal contact with that external world.

Aquinas’s claims of a formal identity and a likeness relationship between knower and known are not just unargued assumptions in his theory of knowledge. Rather, these claims should be seen as based on causal facts about the relationship between cognitive agents and the outside world. It’s because external objects make an impression on our sensory organs and (indirectly) on our higher-order faculties that those impressions, under the name ‘species,’ are formally identical to, and are likenesses of, external objects. Formal identity is thus guaranteed by our causal connections with the world.... In the end, formal identity is a matter of something entirely uncontroversial: that our ideas and impressions are caused from without. (Pasnau, p. 105)

O’Callaghan similarly suggests that causation alone is sufficient for the relevant kind of similitude or formal identity:

It is a general principle for St. Thomas that agents act to produce a likeness of themselves in their effects. There is a common but simplistic way of understanding this that renders it manifestly false, namely something like visual or sensual likeness... But St. Thomas does not understand it in this visual way. The character of the effect is determined by the characteristic of the cause relevant to its agency – the pitcher was shattered because the rock was solid and massive, not because it was gray.... The formal character of the effect is determined by the formal character of the cause – that is what the likeness or similitude consists in. (O’Callaghan, p. 228)

However, a causal connection is not, by itself, sufficient to explain our knowledge of the essential truths associated with natural forms, if the causal chain between the natural entities and the mind is interrupted by the Veil of Contingency. If every causal connection is mediated by merely contingent events in the realm of sensibility, then we cannot explain our knowledge of necessary truths. We need a causal connection of some kind (including, possibly, a formal-causal connection) between those natural forms and human judgments.

O’Callaghan adds a factor that might render his account and mine compatible. He suggests that a causally generated “likeness” grounds cognition only because of the nature of the human intellect:

So why is a likeness in a cognitive power, in particular in the intellect, a cognition? Not simply because it is a likeness as such, but because of the character of the recipient of the likeness. The effect is received in the recipient after the mode of being of the recipient, not after the mode of being of the cause or agent. (O’Callaghan, p. 231)

This is correct, so long as we take into account the effect that is produced in these cases includes the fact that the natural form stands in a relation of formal-causation to an act of understanding, a result that does not follow in all cases of efficient causation alone.

4.3 Formal Identity is Just Primitive Intentionality

Jeffrey Brower and Susan Brower-Toland have suggested that, in Aquinas’s theory, the understood forms are “present” in the intellect simply because the intellect contains a concept that represents the form. Brower and

Brower-Toland propose that this representation relation is metaphysically primitive or undefinable for Aquinas. They propose,

Whenever Aquinas speaks of the form of some object being intentionally present in the mind, we take this to mean that the form of the object in question is present in the mind via the mind's possession of a concept that represents it." (Brower and Brower-Toland, p. 227) They cite the *Disputed Questions on Truth* 2.3 ad 9: "The likeness can be understood as representation – and this sort of likeness is required between cognizer and cognized.

The textual evidence for this interpretation is inconclusive, and so the hermeneutic question must turn on which proffered theory makes the most sense. I agree with Brower and Brower-Toland (and with Pasnau and others) that the problem of intentionality alone may not be sufficient to take the Formal Identity theory seriously. (However, see Klima 2001a and 2001b, and Ross 2008, for impressive arguments to the contrary.) However, once we take into account the problem of knowledge *de necessario*, the need for the formal action of natures on the mind becomes clear.

What if we tried to amplify the Brower-Brower-Toland account by making the primitive intentionality relation into a formal-causal relation, of the sort that could convey information about necessary essential truths to the mind? There would be two difficulties with such a proposal. First, in terms of economy, it would require a large number of formal-causal connections for each human concept: the concept would have to be simultaneously informed by *all* the natural forms of the same species or genus, and not just by a single form located in the mind. Second, and more importantly, the proposal would run afoul of the anti-Platonic argument in section 3. The mechanisms of human understanding would no longer be entirely intrinsic to the individual human mind. Instead, the subject of understanding, the one who really understands, would comprise the human being together with all of the natural forms intended by that human's thoughts.

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HYLOMORPHISM AND OUR KNOWLEDGE OF VALUE

ROBERT C. KOONS

1. Introduction

Both Aristotle and Thomas Aquinas subscribe to a Formal Identity theory about the relation between the human mind and the extra-mental objects of our understanding. This has been one of the most controversial features of Aristotelian and Thomistic metaphysics of the mind. I offer here a defense of the Formal Identity Thesis and of the immateriality of the human intellect, based on specifically epistemological arguments about our knowledge of necessary or essential truths, including especially essential truths about value.

Rather than speaking in terms of *a priori* vs. *a posteriori*, I will speak of knowledge of necessity (*de necessario*) and knowledge of contingency (*de contingente*). The epistemological problem I will focus on concerns what I call the Veil of Contingency. There is a gap between the set of contingent truths (available in sense perception, memory, and testimony) and the set of necessary truths. The contingent truths about the actual world underdetermine the necessary truths, including necessary truths of mathematics, science, and ethics.

For Aristotelians, the class of necessary truths and the class of truths that are somehow grounded by essences are identical. All necessary truths are essential truths or grounded in essential truths, and all essential truths and all truths grounded in essence are necessary. For similar reasons, the necessary and the “universal” are coterminous. What is universal is necessary, and what is necessary is universal. Merely accidental generalizations do not count as ‘universal’ in the relevant sense.

For Aristotelians, it is abstraction by the active intellect that gives us access to essence, and thereby to *de necessario* knowledge. When the intellect

gains access to a form, that form is “in” the intellect. That is, each concept of an essence is a form, a form belonging to an individual mind and of the same kind as (conspecific with) forms occurring outside the mind in nature. There is a direct causal relation of some kind (I will argue, a *formal* causal connection) between these internal forms and acts of understanding and of judgment by the individual human being. Aquinas and those scholastics who follow him call these internal forms the ‘intelligible species’. According to what I am calling the Formal Identity Thesis, the intelligible species is literally conspecific with the substances or accidents in nature being understood. This thesis is explicitly and notoriously propounded by Aristotle in Book 3 of *De Anima*:

Now as to that part of the soul by which it has both cognition and understanding... it must be something unaffected which yet receives the form and is potentially of the same kind as its object but not the same particular... (Aristotle, p. 201, Book 3, chapter 4)

And indeed there is an intellect characterized by the capacity to become all things, and an intellect characterized by that to bring all things about, and to bring them about in just the way that a state, like light, does. (For in a way, light also makes things that are potentially colours colours in actuality.) (Aristotle, p. 204, Book 3, chapter 5)

I will argue in section 2 that some reification of form is necessary to ground our knowledge of objective value. Then, in section 3, I offer an Aristotelian account of our moral knowledge, in terms of the formal identity of the intellect with its object. I criticize three alternative interpretations of Thomas Aquinas’s Formal Identity Thesis in section 4.

2. Knowledge De Bono: The Need for a Connection

Knowledge of value requires knowledge of necessities. There are two compelling Aristotelian reasons why knowledge of the good must be grounded in the knowledge of specific natures.

1. Since *good* is not a genus (*Summa Contra Gentiles* I, 25, 6 and *De Veritate* 1), we grasp particular goods by understanding them as standing in analogies to one another, modes of perfection of different species. So, it is impossible to gain knowledge of the good except in relation to definite forms. If there were no knowledge of creaturely essences, there would be no knowledge of value. Aquinas

clearly states this argument in the *Summa Theologiae*, Part I, Question 5:

The essence of goodness consists in mode, species, and order.

I answer that, everything is said to be good so far as it is perfect; for in that way only is it desirable (as shown above Articles [1], 3). Now a thing is said to be perfect if it lacks nothing according to the mode of its perfection. But since everything is what it is by its form (and since the form presupposes certain things, and from the form certain things necessarily follow), in order for a thing to be perfect and good it must have a form, together with all that precedes and follows upon that form. Now the form presupposes determination or commensuration of its principles, whether material or efficient, and this is signified by the mode: hence it is said that the measure marks the mode. But the form itself is signified by the species; for everything is placed in its species by its form.... Further, upon the form follows an inclination to the end, or to an action, or something of the sort; for everything, in so far as it is in act, acts and tends towards that which is in accordance with its form; and this belongs to weight and order. Hence the essence of goodness, so far as it consists in perfection, consists also in mode, species and order. (*Summa Theologiae* Part I, Q5, a5)

2. We gain knowledge of the good (and other transcendentals, like *being*, *truth*, and *one*) by *reflection* on the primary acts of the intellect, which must be directed to specific natures (Lonergan, p. 66). For example, what Aquinas says about our understanding of truth in *De Veritate* would apply, *mutatis mutandis*, to our knowledge of the good:

And truth is known by the intellect in view of the fact that the intellect reflects upon its own act – not merely as knowing its own act, but as knowing the proportion of its act to the thing. Now, this proportion cannot be known without knowing the nature of the act; and the nature of the act cannot be known without knowing the nature of the active principle, that is, the intellect itself, to whose nature it belongs to be conformed to things. Consequently, it is because the intellect reflects upon itself that it knows truth. (*De Veritate*, Q1, A9, reply)

Being and goodness are convertible. The good is *being as desired*. A good *F* is an *F* that is perfect in its specific nature. The particular goods are analogously and not univocally related to one another. This means that there is no such thing as *a* or *the* form of the good, whether we think of such a form as a Platonic substance or as an individual form. Our knowledge of the

objective good is dependent on our knowledge of specific natural forms and of their necessary relations of analogy to one another.

How far does this principle of analogy stretch? Are there forms of the being of the categories: i.e., substantial being, quantitative being, qualitative being, etc.? Is there similarly a single form of *good substance* or *good action* or *good quality*? Is it only trans-categorical predications that count as analogical rather than univocal?

I think not. Even within a category, the ways of being are quite different; e.g., the substantial being of a stone is quite different from that of a man, or from that of an angel. Aquinas makes a distinction between the common notion of good and “particular goods” in the *Summa Theologiae* I-II, Q10, a2. As Aquinas states, “Any particular good, insofar as it is lacking some good, can be regarded as non-good.” In article 1 of that question, he makes clear that the will is directed of necessity to a general good (a transcendental) and not to any particular good, which I take to mean that there is no genus of good action or good quality. To be a good action, an action must be good in all respects: object, end, and appropriateness to circumstances, all in accordance with right reason. (*Summa Theologiae* I-II, Q18, a4)

There must be, in addition, a connection between our understanding of essences and forms, on the one hand, and our knowledge of necessary truths, on the other. Our knowledge of necessities is, with one exception, based upon our understanding of the essences involved. (The one exception is that we can infer the necessary existence of God as first cause, without grasping His essence.) Yves Simon describes this connection between essences and necessities:

Consider theoretical science. To the extent that it achieves its ideal, it moves beyond the existential data to concern itself with general types and intelligible laws, or, in other words, with formulae of possibility, with essential necessities. Unsupported by rational analysis, empirical hypotheses derived from factual observations represent an incomplete kind of knowing, indeed, a partial defeat of science. The perfection of theoretical knowledge depends above all on the necessity of its object. Thus every time we manage to abstract from experience to reach a necessary object, our understanding, though bearing now on an object separated from existence, is more perfect than our experimental knowledge, which bears on physical existence alone. (Simon, p. 86)

2.1 A Transcendental Argument

I offer here a transcendental argument for the claim that there must be some connection (either causal or metaphysical) between the appearance of value to us and the essential facts about value. The first is a transcendental argument, with an appeal to something analogous to a causal constraint on knowledge.

1. If there were no connection, causal or constitutive, between our judgments about necessity and the corresponding facts about essences, we would have no knowledge of necessity.
2. We do have such knowledge.
3. Therefore, there is some connection, causal or constitutive, between our judgments of necessity and the corresponding essential facts.

Edmund Gettier's paper (1963) revealed the bankruptcy of defining knowledge in terms of justified true belief. Post-Gettier reflections on knowledge have revealed that, at least in the paradigmatic cases of perception, memory, and testimony, knowledge requires a real connection of some kind between the mental state of knowledge and the facts so known. I argued in *Realism Regained* (Koons 2000) that a similar constraint is also required for our knowledge of the laws of nature, mathematics, and logic (see also Koons 2017 and Koons 2018). John Bengson has recently made a similar argument (Bengson 2015). The key fact is that our intuitive (justified) true beliefs can also be Gettierized.

Suppose that a drug XYZ produces randomized intellectual seemings (or, if you prefer, causes our ordinary rational faculties to generate beliefs with randomized contents). When administered to a group of subjects, it is predictable that 1% end up with true intuitive beliefs, 99% with false ones. Those relying on veridical seemings (or belief-generation) under these circumstances do not gain knowledge, although they may have justified true beliefs (assuming that they don't know about the drug and its effect).

Does this result depend in any way on contingency – that is, on the possibility of a given subject believing differently? Replace the drug with genetic manipulation of human gametes. Given origins essentialism, the 1% that end up with true beliefs might have the disposition toward those beliefs essentially. This is still not good enough for knowledge.

Would it be sufficient if the seemings or dispositions to believe were essential to one's species? I think not: just replace the preceding scenarios

with one in which aliens manipulate the evolutionary history of intelligent species on 100 planets, producing reliably true beliefs in 1, mostly false beliefs in 99, with all 100 species equally adept at reproduction. The one intelligent species with species-wide essential dispositions to true belief still lacks knowledge, because of the lack of a real connection between their seemings and dispositions and the relevant truths (whether those truths are themselves necessary or contingent).

The upshot of these thought experiments is this: knowledge is undermined so long as there are relevantly similar seemings or dispositions that are unreliable with respect to truth, and which had an equal or nearly equal propensity to exist.

What if it were metaphysically impossible for there to exist relevantly similar seemings that are false? I reply: Is this impossibility supposed to be true as a matter of brute necessity? It is hard to believe in such a metaphysical necessity without some ground – a ground that only a real connection can provide. And, in any case, a merely brute necessity is too accidental to provide the needed connection between beliefs and their objects. Counterpossible scenarios in which the brute necessity was violated would be epistemologically relevant.

2.2 Sensory Knowledge and Imagination cannot Fill the Gap

Can sensory knowledge alone provide us with the connection that is needed for this knowledge of necessity? I would argue that it cannot, since sensory knowledge can give us knowledge only of *contingent* matters of fact, and there is a Veil of Contingency lying between such matters of fact and the necessary features of the essences of the things perceived. David Hume was perhaps the first to posit such a veil explicitly, arguing that we never directly observe the “necessary connections” between matters of fact, but this deficiency of the power of sensory perception was already an implicit element in the Aristotelian and scholastic traditions. We can only perceive directly the proper sensibles of each of our five senses (i.e., colors, sounds, smells, tastes, and tactile qualities). Even when the common sense is included, our sensory knowledge is limited to the actual distribution of these qualities and quantities, which always lies on the near side of the Veil of Contingency.

It is true that the sensory imagination gives us some limited access to information about what is possible or impossible. However, it is clearly at best a fallible guide to possibility, and so not a source of real knowledge. In addition, since we are concerned here about our knowledge of value, the power of imagination by itself cannot provide us with access to the essences of natural things, like human beings. Imagination can reveal facts only about necessities involving only the proper sensibles (colors, smells, sounds) and space and time (Kant's forms of intuition). It cannot, by itself, tell us any of the necessary truths that are foundational to ethics or moral philosophy. This is not to deny that imagination is indispensable in discerning the right thing to do in particular circumstances.

In addition, there is what Aquinas terms the 'estimative' sense of animals (and the corresponding 'cogitative' power of humans), which does give them some limited access to the evaluative dimension of reality, i.e., what is to be sought or avoided, such as: what is edible, dangerous, desirable as a mate, and so on. But again, this does not rise to the level of general and scientific knowledge of objective value. For that, the intellect must be involved. And so, there must be some direct connection between the intellect and the forms to be understood, a connection that does not depend *constitutively* on sense perception or imagination or the estimative sense and so is able to penetrate the Veil of Contingency. I am not denying that such intellectual knowledge depends causally on prior sense experience, as a necessary but not sufficient condition.

3. Human Knowledge *De Necessario*: An Aristotelian Account

Given that there must be some real connection between worldly essences and the human mind for modal and moral knowledge to be possible, we have to consider two possible connections: efficient and formal. The "platonist" (as we may call the first alternative) supposes that essences are mind-independent substances that interact by way of efficient causation with the human mind. The "aristotelian" (to give a label to the opposite view) supposes instead that there is some formal or constitutive relationship between the essences that are the objects of understanding and the acts of human understanding themselves.

The difficulty with the platonic account is that it cannot both attribute understanding to the human mind (as an intrinsic feature of that mind) and

maintain the strong, per se unity of the human person. Either understanding does not belong to the individual human person but to a system composed of that person and external, universal essences, or the human person itself is partly composed of external substances of a universal character. Neither option seems attractive.

If human thoughts are grounded in essences of external things that are not themselves external to the mind, then these essences must function as *accidents* of the human mind. This means that it cannot be numerically the same form of equinity that informs both my act of understanding and yours. Instead, there must be two forms of the same kind or species (namely, equinity). Similarly, the form of equinity in my mind cannot be numerically identical to the form of equinity of any individual horse.

This Aristotelian account immediately faces a problem, noted by Brower and Brower-Toland and by Panaccio. When a form acts as a formal cause of an intellectual act of understanding, it thereby constitutes a *qualitative accident* of the intellect.¹ However, suppose that the form that is understood is a substantial form or an accidental form belonging to one of the other, nonqualitative categories, such as quantity. In these cases, the same kind of form would have to act as a substantial or nonqualitative accidental form in relation to the natural instances of the species, but as a qualitative form in relation to the intellect.

And finally, the intelligible species has the being of an accident in the cognizer. (See SCG I, 46: “*Species intelligibilis in intellectu praeter essentiam eius existens esse accidentale habet.*”) How could an essence [in the category of substance] ever have the being of an accident? (Panaccio, 193)

For according to this theory, concepts represent things in virtue of standing in the relation of formal sameness to them and hence, can be only “about” things that are intrinsically the same as they are. But concepts, as we have seen, are accidental forms falling in the Aristotelian category of Quality,

¹That they are accidents is explicitly stated by Aquinas in the *Summa Theologiae* Part I, Q5, article 4 and *Summa Contra Gentiles* I, 46. Yves Simon writes, “All major Thomists are unanimous in affirming that immanent action is a quality.” (Simon, p. 66, n29) The immanent act of understanding is such an immanent action and does not fall into the Aristotelian category of *action*, since it lacks the essential properties of that category: to exist with motion, and to produce a passion in some patient.

and presumably qualities can only be intrinsically the same as other qualities. (Brower and Brower-Toland, 216)

One possible answer would be that the difference lies in the way in which the forms relate to minds (as objects of understanding) and the way in which they relate to natural instances (outside of the mind). In effect, this would involve two distinct forms of formal causation, one natural and the other intentional. There are two problems with this proposal. First, it very substantially increases the complexity of the theory. We now have really five modes of causation, material, efficient, final, and two distinct modes of formal causation. Second, as Brower and Brower-Toland point out, it isn't clear that the proposal solves the problem. If an intelligible species is always a qualitative form, how could it be of the same species as a nonqualitative form in nature? It would seem to be intrinsically different from such nonqualitative forms, and so not conspecific with them.

After all, if a quality (in this case a concept) is not in itself formally (or intrinsically) the same as any nonqualitative form, how could it suddenly become such merely by being possessed or instantiated in a special way? And what would explain its becoming formally the same as this thing rather than that? (Brower and Brower-Toland, 217)

A better solution to the proposal is this: we insist that the intelligible species can be intrinsically a form of a non-qualitative sort, even though in some sense its informing of the intellect results in an intellectual "quality" of the mind. And, we should insist that it is the very *same* relation of formal causation that relates nonqualitative forms to minds (resulting in intellectual qualities) and to natural instances (resulting in substances, quantities, and other nonqualitative entities). The nonqualitative form that is an intelligible species is a kind of qualitative accident because of the peculiar nature of the thing that it informs, namely, the intellect. The form is received in a way appropriate to the receiver: as a substance or quantity (when received by matter or a material substance), and as an intellectual quality (when received by the intellect).

I think that perhaps the best way of thinking about this is to introduce a third entity into the picture: a qualitative *act of understanding*. This act of understanding is a form in the category of quality and informs the intellect in the same way that other qualities inform their subjects. The nonqualitative intelligible species would not (in my proposal) *directly* inform the intellect.

Rather, it informs the act of understanding, which, in turn, qualitatively informs the intellect.

This still leaves us with a problem: how can the act of understanding (which *ex hypothesi* is an accidental form) be conspecific with substances and nonqualitative accidents, as the Identity Thesis requires? I think the answer is pretty straightforward. An intelligible species is conspecific with some natural form if and only if the two forms are functionally interchangeable, each having, by virtue of its intrinsic character, the potentiality of doing exactly what the other does. My concept of a horse is a form that could, if it were (*per impossibile*) informing some appropriate signate matter, be the substantial form of a real horse, just as the substantial form of any real horse could, if it were (*per impossibile*) informing some act of understanding in my mind, be an intelligible species of equinity in my mind. To put the equivalence in Scotistic terms, the intelligible species of equinity in my mind is distinct from the substantial form of any given horse because of the numerical distinctness of my act of understanding the horse and the signate matter of the natural horse, just as the distinctness of the substantial forms of any two horses is grounded in the distinctness of the two parcels of signate matter.

Aquinas seems to embrace such a theory, when he refers to the intelligible species as the “essential quality” of the thing known. Here is Robert Schmidt’s summary of the Thomistic view:

The form or species received into the intellect is at once the accidental quality of the intellect and the essential quality of the thing known... [Footnote 53 The expression “essential quality” is used *In I Perh.*, 10, n. 10. Accidental and “substantial” quality are contrasted, *In V Met.* 22, n. 1581.] It is at once the form of the intellect and of the thing known, and is therefore similar to the thing known according to its whole intelligible being. (Schmidt, 110)

There is an analogy in Aristotelian thought between the way that color modifies the transparent medium and the way a form informs the intellect’s act of understanding (see Burnyeat 2001). I will offer analogous interpretations of the two cases. In my interpretation of the transmission of color through the air, the form of a color modifies the quality of transparency of the air. The result is transparent air (not colored air) but with the *spiritual* or *intentional* presence of color, a spiritual accident of the air itself. The form of color belongs to the category of quality, but the spiritual accident of color is a second-order quality: a quality of a quality (in this case, a quality of the quality of transparency). When instead a form of color

directly modifies the surface of a body, the result is a body with the quality of color, i.e., a colored body. Color does not modify the air in that way but only indirectly, via modifying the quality of transparency. Therefore, a spiritual change in quality does not require any change in the first-order qualities of the air, and so, as Aquinas teaches, the spiritual change in the transparent medium does not require any natural change (*In II De Anima*, Lectio 14 n418).

Since transparent air lacks any intrinsic color, the quality of transparency is a potential subject of any color whatsoever. Similarly, since the act of understanding is an immaterial act (i.e., an act only of the soul, without a corporeal organ), it is a potential subject of any material form whatsoever (that is, any form whose natural subject is material).

4. Deflationary alternatives to the Identity Thesis

That completes my defense of the Aristotelian and Thomistic doctrine of the formal identity of the intelligible species with natural forms. In this section, I will consider three alternative interpretations of Aquinas on this point, or perhaps we should call them three deflationary interpretations of the Formal Identity Thesis:

1. Formal identity is just similitude, similarity (Panaccio)
2. Formal identity consists merely in causal contact with the world (Pasnau and O'Callaghan).
3. Formal identity is a primitive form of intentionality (Brower and Brower-Toland)

4.1 Formal Identity is Just Similitude (Panaccio)

Claude Panaccio has argued that formal identity is just similitude. If we ask *How does the nature of the thing understood exist in the mind?* Panaccio contends, “The striking thing here is that when Aquinas wants to tackle the question, he inevitably resorts to the idea of mental similarity (similitude) as being explicative in such matters.” (Panaccio, 187) Panaccio cites the Disputed Questions on Truth I, 3: “The intellect forming quiddities has *nothing but a similitude* of the thing existing outside the mind [*Intellectus formans quidditates non habet nisi similitudinem rei existentis extra animam*].” (Panaccio, p. 193)

Panaccio argues:

The very expression ‘forming quiddities’ that could make us think that the quiddities existed somehow in the mind is here entirely explained by – and hence reduced to – similitude, rather than the other way around. (Panaccio, p. 193)

However, as Stump has argued, the relevant notion of similitude is to be understood in terms of the sharing of forms. Things can be similar in many ways: what makes an act of understanding epistemically relevant is that it shares the very same sort of form shared by the natural species being understood.

‘Similitudo’ is cognate with ‘similis’ (the Latin for ‘similar’); and things are similar insofar as they share qualities – or, as Aquinas would say, forms. And so, on his view, ‘similitude is grounded in an agreement in or sharing of forms. Consequently, there are many kinds of similitude, corresponding to the many ways of sharing forms.’ (ST I.4 a.3) See also QDV 8.8: ‘There is similitude between two things insofar as there is agreement in form.’ (Stump, p. 290n5)

4.2 Formal Identity Consists in Mere Causal Contact (Pasnau, O’Callaghan)

Robert Pasnau and John O’Callaghan have suggested that the formal identity of our concepts with extra-mental forms consists simply in their causal contact with that external world.

Aquinas’s claims of a formal identity and a likeness relationship between knower and known are not just unargued assumptions in his theory of knowledge. Rather, these claims should be seen as based on causal facts about the relationship between cognitive agents and the outside world. It’s because external objects make an impression on our sensory organs and (indirectly) on our higher-order faculties that those impressions, under the name ‘species,’ are formally identical to, and are likenesses of, external objects. Formal identity is thus guaranteed by our causal connections with the world.... In the end, formal identity is a matter of something entirely uncontroversial: that our ideas and impressions are caused from without. (Pasnau, p. 105)

O'Callaghan similarly suggests that causation alone is sufficient for the relevant kind of similitude or formal identity:

It is a general principle for St. Thomas that agents act to produce a likeness of themselves in their effects. There is a common but simplistic way of understanding this that renders it manifestly false, namely something like visual or sensual likeness... But St. Thomas does not understand it in this visual way. The character of the effect is determined by the characteristic of the cause relevant to its agency – the pitcher was shattered because the rock was solid and massive, not because it was gray.... The formal character of the effect is determined by the formal character of the cause – that is what the likeness or similitude consists in. (O'Callaghan, p. 228)

However, a causal connection is not, by itself, sufficient to explain our knowledge of the essential truths associated with natural forms, if the causal chain between the natural entities and the mind is interrupted by the Veil of Contingency. If every causal connection is mediated by merely contingent events in the realm of sensibility, then we cannot explain our knowledge of necessary truths. We need a causal connection of some kind (including, possibly, a formal-causal connection) between those natural forms and human judgments.

O'Callaghan adds a factor that might render his account and mine compatible. He suggests that a causally generated “likeness” grounds cognition only because of the nature of the human intellect:

So why is a likeness in a cognitive power, in particular in the intellect, a cognition? Not simply because it is a likeness as such, but because of the character of the recipient of the likeness. The effect is received in the recipient after the mode of being of the recipient, not after the mode of being of the cause or agent. (O'Callaghan, p. 231)

This is correct, so long as we take into account the effect that is produced in these cases includes the fact that the natural form stands in a relation of formal-causation to an act of understanding, a result that does not follow in all cases of efficient causation alone.

4.3 Formal Identity is Just Primitive Intentionality

Jeffrey Brower and Susan Brower-Toland have suggested that, in Aquinas's theory, the understood forms are “present” in the intellect simply because the intellect contains a concept that represents the form. Brower and

Brower-Toland propose that this representation relation is metaphysically primitive or undefinable for Aquinas. They propose,

Whenever Aquinas speaks of the form of some object being intentionally present in the mind, we take this to mean that the form of the object in question is present in the mind via the mind's possession of a concept that represents it." (Brower and Brower-Toland, p. 227) They cite the *Disputed Questions on Truth* 2.3 ad 9: "The likeness can be understood as representation – and this sort of likeness is required between cognizer and cognized.

The textual evidence for this interpretation is inconclusive, and so the hermeneutic question must turn on which proffered theory makes the most sense. I agree with Brower and Brower-Toland (and with Pasnau and others) that the problem of intentionality alone may not be sufficient to take the Formal Identity theory seriously. (However, see Klima 2001a and 2001b, and Ross 2008, for impressive arguments to the contrary.) However, once we take into account the problem of knowledge *de necessario*, the need for the formal action of natures on the mind becomes clear.

What if we tried to amplify the Brower-Brower-Toland account by making the primitive intentionality relation into a formal-causal relation, of the sort that could convey information about necessary essential truths to the mind? There would be two difficulties with such a proposal. First, in terms of economy, it would require a large number of formal-causal connections for each human concept: the concept would have to be simultaneously informed by *all* the natural forms of the same species or genus, and not just by a single form located in the mind. Second, and more importantly, the proposal would run afoul of the anti-Platonic argument in section 3. The mechanisms of human understanding would no longer be entirely intrinsic to the individual human mind. Instead, the subject of understanding, the one who really understands, would comprise the human being together with all of the natural forms intended by that human's thoughts.

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HYLOMORPHISM AND OUR KNOWLEDGE OF VALUE

ROBERT C. KOONS

1. Introduction

Both Aristotle and Thomas Aquinas subscribe to a Formal Identity theory about the relation between the human mind and the extra-mental objects of our understanding. This has been one of the most controversial features of Aristotelian and Thomistic metaphysics of the mind. I offer here a defense of the Formal Identity Thesis and of the immateriality of the human intellect, based on specifically epistemological arguments about our knowledge of necessary or essential truths, including especially essential truths about value.

Rather than speaking in terms of *a priori* vs. *a posteriori*, I will speak of knowledge of necessity (*de necessario*) and knowledge of contingency (*de contingente*). The epistemological problem I will focus on concerns what I call the Veil of Contingency. There is a gap between the set of contingent truths (available in sense perception, memory, and testimony) and the set of necessary truths. The contingent truths about the actual world underdetermine the necessary truths, including necessary truths of mathematics, science, and ethics.

For Aristotelians, the class of necessary truths and the class of truths that are somehow grounded by essences are identical. All necessary truths are essential truths or grounded in essential truths, and all essential truths and all truths grounded in essence are necessary. For similar reasons, the necessary and the “universal” are coterminous. What is universal is necessary, and what is necessary is universal. Merely accidental generalizations do not count as ‘universal’ in the relevant sense.

For Aristotelians, it is abstraction by the active intellect that gives us access to essence, and thereby to *de necessario* knowledge. When the intellect

gains access to a form, that form is “in” the intellect. That is, each concept of an essence is a form, a form belonging to an individual mind and of the same kind as (conspecific with) forms occurring outside the mind in nature. There is a direct causal relation of some kind (I will argue, a *formal* causal connection) between these internal forms and acts of understanding and of judgment by the individual human being. Aquinas and those scholastics who follow him call these internal forms the ‘intelligible species’. According to what I am calling the Formal Identity Thesis, the intelligible species is literally conspecific with the substances or accidents in nature being understood. This thesis is explicitly and notoriously propounded by Aristotle in Book 3 of *De Anima*:

Now as to that part of the soul by which it has both cognition and understanding... it must be something unaffected which yet receives the form and is potentially of the same kind as its object but not the same particular... (Aristotle, p. 201, Book 3, chapter 4)

And indeed there is an intellect characterized by the capacity to become all things, and an intellect characterized by that to bring all things about, and to bring them about in just the way that a state, like light, does. (For in a way, light also makes things that are potentially colours colours in actuality.) (Aristotle, p. 204, Book 3, chapter 5)

I will argue in section 2 that some reification of form is necessary to ground our knowledge of objective value. Then, in section 3, I offer an Aristotelian account of our moral knowledge, in terms of the formal identity of the intellect with its object. I criticize three alternative interpretations of Thomas Aquinas’s Formal Identity Thesis in section 4.

2. Knowledge De Bono: The Need for a Connection

Knowledge of value requires knowledge of necessities. There are two compelling Aristotelian reasons why knowledge of the good must be grounded in the knowledge of specific natures.

1. Since *good* is not a genus (*Summa Contra Gentiles* I, 25, 6 and *De Veritate* 1), we grasp particular goods by understanding them as standing in analogies to one another, modes of perfection of different species. So, it is impossible to gain knowledge of the good except in relation to definite forms. If there were no knowledge of creaturely essences, there would be no knowledge of value. Aquinas

clearly states this argument in the *Summa Theologiae*, Part I, Question 5:

The essence of goodness consists in mode, species, and order.

I answer that, everything is said to be good so far as it is perfect; for in that way only is it desirable (as shown above Articles [1], 3). Now a thing is said to be perfect if it lacks nothing according to the mode of its perfection. But since everything is what it is by its form (and since the form presupposes certain things, and from the form certain things necessarily follow), in order for a thing to be perfect and good it must have a form, together with all that precedes and follows upon that form. Now the form presupposes determination or commensuration of its principles, whether material or efficient, and this is signified by the mode: hence it is said that the measure marks the mode. But the form itself is signified by the species; for everything is placed in its species by its form.... Further, upon the form follows an inclination to the end, or to an action, or something of the sort; for everything, in so far as it is in act, acts and tends towards that which is in accordance with its form; and this belongs to weight and order. Hence the essence of goodness, so far as it consists in perfection, consists also in mode, species and order. (*Summa Theologiae* Part I, Q5, a5)

2. We gain knowledge of the good (and other transcendentals, like *being*, *truth*, and *one*) by *reflection* on the primary acts of the intellect, which must be directed to specific natures (Lonergan, p. 66). For example, what Aquinas says about our understanding of truth in *De Veritate* would apply, *mutatis mutandis*, to our knowledge of the good:

And truth is known by the intellect in view of the fact that the intellect reflects upon its own act – not merely as knowing its own act, but as knowing the proportion of its act to the thing. Now, this proportion cannot be known without knowing the nature of the act; and the nature of the act cannot be known without knowing the nature of the active principle, that is, the intellect itself, to whose nature it belongs to be conformed to things. Consequently, it is because the intellect reflects upon itself that it knows truth. (*De Veritate*, Q1, A9, reply)

Being and goodness are convertible. The good is *being as desired*. A good *F* is an *F* that is perfect in its specific nature. The particular goods are analogously and not univocally related to one another. This means that there is no such thing as *a* or *the* form of the good, whether we think of such a form as a Platonic substance or as an individual form. Our knowledge of the

objective good is dependent on our knowledge of specific natural forms and of their necessary relations of analogy to one another.

How far does this principle of analogy stretch? Are there forms of the being of the categories: i.e., substantial being, quantitative being, qualitative being, etc.? Is there similarly a single form of *good substance* or *good action* or *good quality*? Is it only trans-categorical predications that count as analogical rather than univocal?

I think not. Even within a category, the ways of being are quite different; e.g., the substantial being of a stone is quite different from that of a man, or from that of an angel. Aquinas makes a distinction between the common notion of good and “particular goods” in the *Summa Theologiae* I-II, Q10, a2. As Aquinas states, “Any particular good, insofar as it is lacking some good, can be regarded as non-good.” In article 1 of that question, he makes clear that the will is directed of necessity to a general good (a transcendental) and not to any particular good, which I take to mean that there is no genus of good action or good quality. To be a good action, an action must be good in all respects: object, end, and appropriateness to circumstances, all in accordance with right reason. (*Summa Theologiae* I-II, Q18, a4)

There must be, in addition, a connection between our understanding of essences and forms, on the one hand, and our knowledge of necessary truths, on the other. Our knowledge of necessities is, with one exception, based upon our understanding of the essences involved. (The one exception is that we can infer the necessary existence of God as first cause, without grasping His essence.) Yves Simon describes this connection between essences and necessities:

Consider theoretical science. To the extent that it achieves its ideal, it moves beyond the existential data to concern itself with general types and intelligible laws, or, in other words, with formulae of possibility, with essential necessities. Unsupported by rational analysis, empirical hypotheses derived from factual observations represent an incomplete kind of knowing, indeed, a partial defeat of science. The perfection of theoretical knowledge depends above all on the necessity of its object. Thus every time we manage to abstract from experience to reach a necessary object, our understanding, though bearing now on an object separated from existence, is more perfect than our experimental knowledge, which bears on physical existence alone. (Simon, p. 86)

2.1 A Transcendental Argument

I offer here a transcendental argument for the claim that there must be some connection (either causal or metaphysical) between the appearance of value to us and the essential facts about value. The first is a transcendental argument, with an appeal to something analogous to a causal constraint on knowledge.

1. If there were no connection, causal or constitutive, between our judgments about necessity and the corresponding facts about essences, we would have no knowledge of necessity.
2. We do have such knowledge.
3. Therefore, there is some connection, causal or constitutive, between our judgments of necessity and the corresponding essential facts.

Edmund Gettier's paper (1963) revealed the bankruptcy of defining knowledge in terms of justified true belief. Post-Gettier reflections on knowledge have revealed that, at least in the paradigmatic cases of perception, memory, and testimony, knowledge requires a real connection of some kind between the mental state of knowledge and the facts so known. I argued in *Realism Regained* (Koons 2000) that a similar constraint is also required for our knowledge of the laws of nature, mathematics, and logic (see also Koons 2017 and Koons 2018). John Bengson has recently made a similar argument (Bengson 2015). The key fact is that our intuitive (justified) true beliefs can also be Gettierized.

Suppose that a drug XYZ produces randomized intellectual seemings (or, if you prefer, causes our ordinary rational faculties to generate beliefs with randomized contents). When administered to a group of subjects, it is predictable that 1% end up with true intuitive beliefs, 99% with false ones. Those relying on veridical seemings (or belief-generation) under these circumstances do not gain knowledge, although they may have justified true beliefs (assuming that they don't know about the drug and its effect).

Does this result depend in any way on contingency – that is, on the possibility of a given subject believing differently? Replace the drug with genetic manipulation of human gametes. Given origins essentialism, the 1% that end up with true beliefs might have the disposition toward those beliefs essentially. This is still not good enough for knowledge.

Would it be sufficient if the seemings or dispositions to believe were essential to one's species? I think not: just replace the preceding scenarios

with one in which aliens manipulate the evolutionary history of intelligent species on 100 planets, producing reliably true beliefs in 1, mostly false beliefs in 99, with all 100 species equally adept at reproduction. The one intelligent species with species-wide essential dispositions to true belief still lacks knowledge, because of the lack of a real connection between their seemings and dispositions and the relevant truths (whether those truths are themselves necessary or contingent).

The upshot of these thought experiments is this: knowledge is undermined so long as there are relevantly similar seemings or dispositions that are unreliable with respect to truth, and which had an equal or nearly equal propensity to exist.

What if it were metaphysically impossible for there to exist relevantly similar seemings that are false? I reply: Is this impossibility supposed to be true as a matter of brute necessity? It is hard to believe in such a metaphysical necessity without some ground – a ground that only a real connection can provide. And, in any case, a merely brute necessity is too accidental to provide the needed connection between beliefs and their objects. Counterpossible scenarios in which the brute necessity was violated would be epistemologically relevant.

2.2 Sensory Knowledge and Imagination cannot Fill the Gap

Can sensory knowledge alone provide us with the connection that is needed for this knowledge of necessity? I would argue that it cannot, since sensory knowledge can give us knowledge only of *contingent* matters of fact, and there is a Veil of Contingency lying between such matters of fact and the necessary features of the essences of the things perceived. David Hume was perhaps the first to posit such a veil explicitly, arguing that we never directly observe the “necessary connections” between matters of fact, but this deficiency of the power of sensory perception was already an implicit element in the Aristotelian and scholastic traditions. We can only perceive directly the proper sensibles of each of our five senses (i.e., colors, sounds, smells, tastes, and tactile qualities). Even when the common sense is included, our sensory knowledge is limited to the actual distribution of these qualities and quantities, which always lies on the near side of the Veil of Contingency.

It is true that the sensory imagination gives us some limited access to information about what is possible or impossible. However, it is clearly at best a fallible guide to possibility, and so not a source of real knowledge. In addition, since we are concerned here about our knowledge of value, the power of imagination by itself cannot provide us with access to the essences of natural things, like human beings. Imagination can reveal facts only about necessities involving only the proper sensibles (colors, smells, sounds) and space and time (Kant's forms of intuition). It cannot, by itself, tell us any of the necessary truths that are foundational to ethics or moral philosophy. This is not to deny that imagination is indispensable in discerning the right thing to do in particular circumstances.

In addition, there is what Aquinas terms the 'estimative' sense of animals (and the corresponding 'cogitative' power of humans), which does give them some limited access to the evaluative dimension of reality, i.e., what is to be sought or avoided, such as: what is edible, dangerous, desirable as a mate, and so on. But again, this does not rise to the level of general and scientific knowledge of objective value. For that, the intellect must be involved. And so, there must be some direct connection between the intellect and the forms to be understood, a connection that does not depend *constitutively* on sense perception or imagination or the estimative sense and so is able to penetrate the Veil of Contingency. I am not denying that such intellectual knowledge depends causally on prior sense experience, as a necessary but not sufficient condition.

3. Human Knowledge *De Necessario*: An Aristotelian Account

Given that there must be some real connection between worldly essences and the human mind for modal and moral knowledge to be possible, we have to consider two possible connections: efficient and formal. The "platonist" (as we may call the first alternative) supposes that essences are mind-independent substances that interact by way of efficient causation with the human mind. The "aristotelian" (to give a label to the opposite view) supposes instead that there is some formal or constitutive relationship between the essences that are the objects of understanding and the acts of human understanding themselves.

The difficulty with the platonic account is that it cannot both attribute understanding to the human mind (as an intrinsic feature of that mind) and

maintain the strong, per se unity of the human person. Either understanding does not belong to the individual human person but to a system composed of that person and external, universal essences, or the human person itself is partly composed of external substances of a universal character. Neither option seems attractive.

If human thoughts are grounded in essences of external things that are not themselves external to the mind, then these essences must function as *accidents* of the human mind. This means that it cannot be numerically the same form of equinity that informs both my act of understanding and yours. Instead, there must be two forms of the same kind or species (namely, equinity). Similarly, the form of equinity in my mind cannot be numerically identical to the form of equinity of any individual horse.

This Aristotelian account immediately faces a problem, noted by Brower and Brower-Toland and by Panaccio. When a form acts as a formal cause of an intellectual act of understanding, it thereby constitutes a *qualitative accident* of the intellect.¹ However, suppose that the form that is understood is a substantial form or an accidental form belonging to one of the other, nonqualitative categories, such as quantity. In these cases, the same kind of form would have to act as a substantial or nonqualitative accidental form in relation to the natural instances of the species, but as a qualitative form in relation to the intellect.

And finally, the intelligible species has the being of an accident in the cognizer. (See SCG I, 46: “*Species intelligibilis in intellectu praeter essentiam eius existens esse accidentale habet.*”) How could an essence [in the category of substance] ever have the being of an accident? (Panaccio, 193)

For according to this theory, concepts represent things in virtue of standing in the relation of formal sameness to them and hence, can be only “about” things that are intrinsically the same as they are. But concepts, as we have seen, are accidental forms falling in the Aristotelian category of Quality,

¹That they are accidents is explicitly stated by Aquinas in the *Summa Theologiae* Part I, Q5, article 4 and *Summa Contra Gentiles* I, 46. Yves Simon writes, “All major Thomists are unanimous in affirming that immanent action is a quality.” (Simon, p. 66, n29) The immanent act of understanding is such an immanent action and does not fall into the Aristotelian category of *action*, since it lacks the essential properties of that category: to exist with motion, and to produce a passion in some patient.

and presumably qualities can only be intrinsically the same as other qualities. (Brower and Brower-Toland, 216)

One possible answer would be that the difference lies in the way in which the forms relate to minds (as objects of understanding) and the way in which they relate to natural instances (outside of the mind). In effect, this would involve two distinct forms of formal causation, one natural and the other intentional. There are two problems with this proposal. First, it very substantially increases the complexity of the theory. We now have really five modes of causation, material, efficient, final, and two distinct modes of formal causation. Second, as Brower and Brower-Toland point out, it isn't clear that the proposal solves the problem. If an intelligible species is always a qualitative form, how could it be of the same species as a nonqualitative form in nature? It would seem to be intrinsically different from such nonqualitative forms, and so not conspecific with them.

After all, if a quality (in this case a concept) is not in itself formally (or intrinsically) the same as any nonqualitative form, how could it suddenly become such merely by being possessed or instantiated in a special way? And what would explain its becoming formally the same as this thing rather than that? (Brower and Brower-Toland, 217)

A better solution to the proposal is this: we insist that the intelligible species can be intrinsically a form of a non-qualitative sort, even though in some sense its informing of the intellect results in an intellectual "quality" of the mind. And, we should insist that it is the very *same* relation of formal causation that relates nonqualitative forms to minds (resulting in intellectual qualities) and to natural instances (resulting in substances, quantities, and other nonqualitative entities). The nonqualitative form that is an intelligible species is a kind of qualitative accident because of the peculiar nature of the thing that it informs, namely, the intellect. The form is received in a way appropriate to the receiver: as a substance or quantity (when received by matter or a material substance), and as an intellectual quality (when received by the intellect).

I think that perhaps the best way of thinking about this is to introduce a third entity into the picture: a qualitative *act of understanding*. This act of understanding is a form in the category of quality and informs the intellect in the same way that other qualities inform their subjects. The nonqualitative intelligible species would not (in my proposal) *directly* inform the intellect.

Rather, it informs the act of understanding, which, in turn, qualitatively informs the intellect.

This still leaves us with a problem: how can the act of understanding (which *ex hypothesi* is an accidental form) be conspecific with substances and nonqualitative accidents, as the Identity Thesis requires? I think the answer is pretty straightforward. An intelligible species is conspecific with some natural form if and only if the two forms are functionally interchangeable, each having, by virtue of its intrinsic character, the potentiality of doing exactly what the other does. My concept of a horse is a form that could, if it were (*per impossibile*) informing some appropriate signate matter, be the substantial form of a real horse, just as the substantial form of any real horse could, if it were (*per impossibile*) informing some act of understanding in my mind, be an intelligible species of equinity in my mind. To put the equivalence in Scotistic terms, the intelligible species of equinity in my mind is distinct from the substantial form of any given horse because of the numerical distinctness of my act of understanding the horse and the signate matter of the natural horse, just as the distinctness of the substantial forms of any two horses is grounded in the distinctness of the two parcels of signate matter.

Aquinas seems to embrace such a theory, when he refers to the intelligible species as the “essential quality” of the thing known. Here is Robert Schmidt’s summary of the Thomistic view:

The form or species received into the intellect is at once the accidental quality of the intellect and the essential quality of the thing known... [Footnote 53 The expression “essential quality” is used *In I Perh.*, 10, n. 10. Accidental and “substantial” quality are contrasted, *In V Met.* 22, n. 1581.] It is at once the form of the intellect and of the thing known, and is therefore similar to the thing known according to its whole intelligible being. (Schmidt, 110)

There is an analogy in Aristotelian thought between the way that color modifies the transparent medium and the way a form informs the intellect’s act of understanding (see Burnyeat 2001). I will offer analogous interpretations of the two cases. In my interpretation of the transmission of color through the air, the form of a color modifies the quality of transparency of the air. The result is transparent air (not colored air) but with the *spiritual* or *intentional* presence of color, a spiritual accident of the air itself. The form of color belongs to the category of quality, but the spiritual accident of color is a second-order quality: a quality of a quality (in this case, a quality of the quality of transparency). When instead a form of color

directly modifies the surface of a body, the result is a body with the quality of color, i.e., a colored body. Color does not modify the air in that way but only indirectly, via modifying the quality of transparency. Therefore, a spiritual change in quality does not require any change in the first-order qualities of the air, and so, as Aquinas teaches, the spiritual change in the transparent medium does not require any natural change (*In II De Anima*, Lectio 14 n418).

Since transparent air lacks any intrinsic color, the quality of transparency is a potential subject of any color whatsoever. Similarly, since the act of understanding is an immaterial act (i.e., an act only of the soul, without a corporeal organ), it is a potential subject of any material form whatsoever (that is, any form whose natural subject is material).

4. Deflationary alternatives to the Identity Thesis

That completes my defense of the Aristotelian and Thomistic doctrine of the formal identity of the intelligible species with natural forms. In this section, I will consider three alternative interpretations of Aquinas on this point, or perhaps we should call them three deflationary interpretations of the Formal Identity Thesis:

1. Formal identity is just similitude, similarity (Panaccio)
2. Formal identity consists merely in causal contact with the world (Pasnau and O'Callaghan).
3. Formal identity is a primitive form of intentionality (Brower and Brower-Toland)

4.1 Formal Identity is Just Similitude (Panaccio)

Claude Panaccio has argued that formal identity is just similitude. If we ask *How does the nature of the thing understood exist in the mind?* Panaccio contends, “The striking thing here is that when Aquinas wants to tackle the question, he inevitably resorts to the idea of mental similarity (similitude) as being explicative in such matters.” (Panaccio, 187) Panaccio cites the Disputed Questions on Truth I, 3: “The intellect forming quiddities has *nothing but a similitude* of the thing existing outside the mind [*Intellectus formans quidditates non habet nisi similitudinem rei existentis extra animam*].” (Panaccio, p. 193)

Panaccio argues:

The very expression ‘forming quiddities’ that could make us think that the quiddities existed somehow in the mind is here entirely explained by – and hence reduced to – similitude, rather than the other way around. (Panaccio, p. 193)

However, as Stump has argued, the relevant notion of similitude is to be understood in terms of the sharing of forms. Things can be similar in many ways: what makes an act of understanding epistemically relevant is that it shares the very same sort of form shared by the natural species being understood.

‘Similitudo’ is cognate with ‘similis’ (the Latin for ‘similar’); and things are similar insofar as they share qualities – or, as Aquinas would say, forms. And so, on his view, ‘similitude is grounded in an agreement in or sharing of forms. Consequently, there are many kinds of similitude, corresponding to the many ways of sharing forms.’ (ST I.4 a.3) See also QDV 8.8: ‘There is similitude between two things insofar as there is agreement in form.’ (Stump, p. 290n5)

4.2 Formal Identity Consists in Mere Causal Contact (Pasnau, O’Callaghan)

Robert Pasnau and John O’Callaghan have suggested that the formal identity of our concepts with extra-mental forms consists simply in their causal contact with that external world.

Aquinas’s claims of a formal identity and a likeness relationship between knower and known are not just unargued assumptions in his theory of knowledge. Rather, these claims should be seen as based on causal facts about the relationship between cognitive agents and the outside world. It’s because external objects make an impression on our sensory organs and (indirectly) on our higher-order faculties that those impressions, under the name ‘species,’ are formally identical to, and are likenesses of, external objects. Formal identity is thus guaranteed by our causal connections with the world.... In the end, formal identity is a matter of something entirely uncontroversial: that our ideas and impressions are caused from without. (Pasnau, p. 105)

O'Callaghan similarly suggests that causation alone is sufficient for the relevant kind of similitude or formal identity:

It is a general principle for St. Thomas that agents act to produce a likeness of themselves in their effects. There is a common but simplistic way of understanding this that renders it manifestly false, namely something like visual or sensual likeness... But St. Thomas does not understand it in this visual way. The character of the effect is determined by the characteristic of the cause relevant to its agency – the pitcher was shattered because the rock was solid and massive, not because it was gray.... The formal character of the effect is determined by the formal character of the cause – that is what the likeness or similitude consists in. (O'Callaghan, p. 228)

However, a causal connection is not, by itself, sufficient to explain our knowledge of the essential truths associated with natural forms, if the causal chain between the natural entities and the mind is interrupted by the Veil of Contingency. If every causal connection is mediated by merely contingent events in the realm of sensibility, then we cannot explain our knowledge of necessary truths. We need a causal connection of some kind (including, possibly, a formal-causal connection) between those natural forms and human judgments.

O'Callaghan adds a factor that might render his account and mine compatible. He suggests that a causally generated “likeness” grounds cognition only because of the nature of the human intellect:

So why is a likeness in a cognitive power, in particular in the intellect, a cognition? Not simply because it is a likeness as such, but because of the character of the recipient of the likeness. The effect is received in the recipient after the mode of being of the recipient, not after the mode of being of the cause or agent. (O'Callaghan, p. 231)

This is correct, so long as we take into account the effect that is produced in these cases includes the fact that the natural form stands in a relation of formal-causation to an act of understanding, a result that does not follow in all cases of efficient causation alone.

4.3 Formal Identity is Just Primitive Intentionality

Jeffrey Brower and Susan Brower-Toland have suggested that, in Aquinas's theory, the understood forms are “present” in the intellect simply because the intellect contains a concept that represents the form. Brower and

Brower-Toland propose that this representation relation is metaphysically primitive or undefinable for Aquinas. They propose,

Whenever Aquinas speaks of the form of some object being intentionally present in the mind, we take this to mean that the form of the object in question is present in the mind via the mind's possession of a concept that represents it." (Brower and Brower-Toland, p. 227) They cite the *Disputed Questions on Truth* 2.3 ad 9: "The likeness can be understood as representation – and this sort of likeness is required between cognizer and cognized.

The textual evidence for this interpretation is inconclusive, and so the hermeneutic question must turn on which proffered theory makes the most sense. I agree with Brower and Brower-Toland (and with Pasnau and others) that the problem of intentionality alone may not be sufficient to take the Formal Identity theory seriously. (However, see Klima 2001a and 2001b, and Ross 2008, for impressive arguments to the contrary.) However, once we take into account the problem of knowledge *de necessario*, the need for the formal action of natures on the mind becomes clear.

What if we tried to amplify the Brower-Brower-Toland account by making the primitive intentionality relation into a formal-causal relation, of the sort that could convey information about necessary essential truths to the mind? There would be two difficulties with such a proposal. First, in terms of economy, it would require a large number of formal-causal connections for each human concept: the concept would have to be simultaneously informed by *all* the natural forms of the same species or genus, and not just by a single form located in the mind. Second, and more importantly, the proposal would run afoul of the anti-Platonic argument in section 3. The mechanisms of human understanding would no longer be entirely intrinsic to the individual human mind. Instead, the subject of understanding, the one who really understands, would comprise the human being together with all of the natural forms intended by that human's thoughts.

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