

SOME THOMISTIC PROPERTIES OF PRIMORDIALITY

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In trying to *préciser* the character of the primordial God, we should realize straightaway, it would seem, that no *physical* attributes or properties should properly be ascribed to Him as a whole. God should be given no spatial location, no temperature, no mass, no density, no coefficient of expansion, or the like. Similarly he should be given no *temporal* location either. He is neither before or after or contemporaneous with this or that physical occurrence in some time-system in accord, say, with the special theory of relativity. Nor is he to be located temporally in accord with any other physical theory of time. This observation might be thought supererogatory, but some process theologians seem to deny it. In some sense surely, we wish to be able to say that God is atemporal or eternal. Even Whitehead, the prince of the process theologians, seems to allow this for the primordial nature.

St. Thomas Aquinas has put the matter well in noting that "eternity is known from two facts: first, because what is eternal is interminable—that is, has no beginning or end (that is, no term either way); secondly, because eternity itself has no succession, being simultaneously whole" (*Summa Theologica*, I, q.10, a.2). This passage is not without ambiguity, however. Are we to understand it as saying that it is *false* that what is eternal has both beginning and end and that it is false that what is eternal has succession? Or are we to understand it as saying that it is *meaningless* even to say so? False statements are not therewith meaningless, it should be recalled. So-called meaningless statements are neither true nor false, nor are they indeed even statements. It will make an enormous difference in our natural theology as to how this ambiguity is resolved. If in the former way, we will have upon our hands the difficult problem of showing precisely and in detail how physical time and the divine nature are interrelated within what, it is hoped, would be the latest and best established contemporary physical theory.¹ And howsoever this would be worked

1. Cf. Paul Fitzgerald, "Relativity physics and the God of process philosophy," *Process Studies*, vol. 2 (1972), pp. 251-276.

out, God would emerge as an extraordinary entity, an exception to physical laws and to logico-metaphysical principles. It is precisely this that Whitehead wished to avoid. God should not be an exception to but rather the chief exemplification of the logico-metaphysical scheme adopted.

It would seem extraordinary if the very internal structure of natural theology should have to base itself upon the latest achievements of physical science. Whatever God's nature is, it is the same *in principio et nunc et semper et in saeculo saeculorum*, and our view of it should not have to change with every scientific advance. It is rather the other way around in a certain way: the scientific advance is already contained in God's envisagement, as previously noted.²

It would seem better then, in view of these considerations, to formulate systematic theology in such a way as to exclude as meaningless all temporal talk from a discussion of God's nature, just as we exclude all talk of physical temperature, mass, velocity, and the like. All temporal or quasi-temporal words should thus be used with caution. Strictly we should not even use the words 'simultaneous', or 'succession', or the like, unless they are explicitly defined in just the sense that is needed. To say that an eternal being is "simultaneously whole" is misleading without an exact definition of the phrase. And howsoever defined it should presumably then follow not only that God is eternal but that he is uniquely so. This will be provable, however, only *after* a theory of time has been introduced into the system. That theory itself should be of the best scientific provenance available, but subject of course to change and improvement. Hence the theorem concerning eternity will be *relative to a given theory of time* with respect to which 'eternal' is given meaning. Note that this theorem contrasts sharply with the analogous theorem if physical time were built into our theology at the outset, for then some one time-scheme is declared the true or fundamental one.

But we are getting ahead of our story. Let us start with the great *locus classicus* of discussions of God's attributes, the *Summa Theologica* I, 1, and reflect upon them one by one. This will be done on the basis of the conception of God as a *fusion of primordial valuations* discussed previously. This latter results from that of Whitehead's primordial nature of God by giving the primordial valuations an exact logico-metaphysical framework. This framework is thought to be more acceptable than that of Whitehead on several grounds. Note in particular that no place is allowed for the consequent nature of God, which, it is claimed, is not needed. Also eternal objects are rejected in favor of *virtual* classes and relations, a step

2. In the author's "On God and primordially," *The Review of Metaphysics*, vol. 29 (1976); pp. 497-522. For related discussions see W. Norris Clarke, "A new look at the immutability of God," in *God Knowable and Unknowable*, Fordham University Press, New York (1973), pp. 43-73, and Lewis Ford, "Boethius and Whitehead on time and eternity," *International Philosophical Quarterly*, vol. VIII (1968), pp. 38-67.

bringing the theory closer to Aristotle and St. Thomas of course, and to Hartshorne than to Plato.

The logic presupposed is merely that of first order, augmented with mereology or the calculus of individuals, and a theory of events, states, acts, processes, and the like.³ It is only with the addition of these latter that modern philosophic logic may be said to have come of age; for it is only with them that we have for the first time, it would seem, a sufficiently pliable logic to be of genuine help in analyzing and clarifying the really important philosophical issues. The mathematical theory of sets has proved to be merely obfuscatory here, even though it has been widely cultivated within recent decades by mathematicians and philosophers alike. Set theory, like that of the Platonic forms, has built "between thought and the world of sense an insuperable barrier of essences, a barrier that the human intellect . . . [is] never able to cross."⁴

First let us recall from the previous paper a few principles concerning God's nature and existence that have already been established in the system. The first is that God *exists* as a unique entity, in the sense of 'exists' appropriate for Russellian descriptions.

$\vdash E! \text{ God.}$

Further God is totally *other* in the sense of being distinct from all objects.

$\vdash (e)(\text{Obj } e \supset \sim e = \text{God}).$

(The objects are regarded as just the entities other than primordial valuations or compounds of them.)

A fundamental contention of St. Thomas is that God's essence is the same as his being (q.3, a. 3, and 4) and this view is intimately connected with the Aristotelian doctrines of genera, species, causation, and the like. Can we make sense of this contention independent of those doctrines? The "essence" of God is given here by the definition,

'God' abbreviates '(Fu 'F)',

where **F** is the virtual class of all primordial valuations, and (Fu 'F) is the mereological fusion of that class. This fusion might even be said to *be* the essence of God, the membership of **F** totally determining his nature. The theorem (but not the definition, note) that

$\vdash \text{God} = (\text{Fu 'F})$

then states that God is identical with his own essence. We also have immediately that

3. See the author's *Whitehead's Categoreal Scheme and Other Papers*, Martinus Nijhoff, The Hague (1974) and *Events, Reference, and Logical Form*, The Catholic University of America Press, Washington, to appear.

4. Quoted from Anton Pégis in *Basic Writings of Saint Thomas Aquinas*, Random House, New York (1945), Vol. One, Introduction, p. xlvi.

$$\vdash E! \text{ God} \equiv (Ee)e \varepsilon F,$$

so that God exists (in the descriptive sense) if and only if the class determining his essence exists (in the sense appropriate to virtual classes), i.e., if and only if F has a member. And note that God is the *only* entity of which this can be said. We may see this as follows.

Consider any individual constant 'j', say, *defined* as '($\lambda e.e \varepsilon G$)' for some suitable G regarded as determining j's essence. Then it is *not* the case that

$$E!j \equiv (Ee)e \varepsilon G,$$

but only that

$$\vdash E!j \equiv (Ee)(e \varepsilon G.(e')(e' \varepsilon G \supset e' = e)).$$

And if 'j' is a *primitive* individual constant, then

$$\vdash E!j \equiv \sim \text{Null } j,$$

where 'Null j' expresses that j is the null individual.⁵ In a genuine sense, then, we see that God is the one and only entity whose existence is equivalent to the existence of its definitional essence.

Let 'Body e' express that e is a material body, i.e., an object having such and such physical characteristics. God not being an object, he cannot *a fortiori* be a material body, so that (q.3, a.1)

$$\vdash (e)(\text{Body } e \supset \sim e = \text{God}).$$

Similarly where 'Move e' expresses that e is a body capable of motion, we have that

$$\vdash (e)(\text{Move } e \supset \sim e = \text{God}).$$

And where 'Mat e' expresses that e is some portion of matter—whatever that is—and 'P' stands for the part-whole relation between individuals, we have (q.3, a.3) that

$$\vdash (e)(\text{Mat } e \supset \sim e \text{ P God}).$$

These principles are a bit naive, no doubt, being based on an out-moded physics. Even so, we may let them stand for the moment.

A few metalinguistic properties of 'God' should be noted. 'God' is neither a genus-word nor a species-word (q.3, a.5), these latter being virtual-class expressions. Similarly 'God' is not a non-logical virtual-class expression, and hence not a word for an "accidental". (We may say that 'F' is an *accidental* property-word in 'Fa' provided 'Fa' is true but not logically so (factually or accidentally true), 'a' here being an individual constant.) And similarly 'God' is not a word for a form or idea, but for an

5. See the author's "Of time and the null individual," *The Journal of Philosophy*, vol. 62 (1965), pp. 723-736.

individual. Nor is 'God' a word for a *society* of occasions, but only for the fusion of the appropriate society.

"God is truly and absolutely simple," Augustine noted (*De Trin.*, VI (PL 42, 928)), and St. Thomas carries this over *sans phrase* (q.3, a.7). But note how 'simple' is construed: ". . . there is neither composition of quantitative parts in God, since He is not a body; nor composition of form and matter; nor does His nature differ from His *suppositum*; nor His essence from His being; neither is there in Him composition of genus and difference, nor of subject and accident. Therefore it is clear that God is in no way composite, but is altogether simple . . ." No difficulty arises in accommodating this contention here. However, there is another sense in which God *should* be regarded as composite, namely, as the logical sum (perhaps even a countably infinite one—perhaps even a non-countably infinite one?) of all primordial valuations. Where e_1, e_2, \dots is the list of these, we have that

$$\text{God} = (e_1 \cup e_2 \cup \dots),$$

where 'U' is the sign for the operation of summation. Even so, of course, all the summands here are closely similar in structure, so that God is a sum of similars, not of entities remarkably disparate from one another.

Nothing technical has been said thus far concerning causation. The *secunda via* (q.2, a.3) requires fundamental use of a relation of efficient causation. Let us follow Donald Davidson for the moment in taking tentatively

$$'e_1 \text{ Cause } e_2'$$

to express that event e_1 causes e_2 in the efficient sense.⁶ Then of course God may significantly be said to cause or to be caused. Presumably one would have then that

$$\sim (Ee)e \text{ Cause God}$$

and that

$$\vdash (e)(\sim e \text{ P God} \supset \text{God Cause } e).$$

However, the key relation of Cause needs a good deal of further analysis before we have any sufficiently clear statements to be adapted here.

God cannot "enter into the composition of anything, either as a formal or a material principle" (q.3, a.8). Clearly

$$\vdash \sim \text{Mat God},$$

and hence

$$\vdash (e)(\text{Mat } e \supset \sim \text{God P } e),$$

assuming that

6. See his "Causal relations," *The Journal of Philosophy*, vol. 64 (1967), pp. 691-703. Strictly, however, the relation should be intentionalized. Cf. G. Frege, "Über Sinn and Bedeutung," eighth paragraph from the end.

$$\vdash (e_1)(e_2)((\text{Mat } e_1 . e_2 \text{ P } e_1 . \sim \text{Null } e_2) \supset \text{Mat } e_2).$$

Likewise 'God' not being a form-word, expressions of the sort 'God e ' are not false but meaningless.

The meaning of 'perfect' or 'perfection' is to be articulated wholly by reference to the primordial valuations. To say that

$$a \text{ PrOblgd } e_1, \dots, e_k,$$

for example, is to say that the k -place predicate a is *primordially obliged* to apply to e_1, \dots, e_k . And to say this is to say that it is *perfect*, or *ideal*, or *good to the highest possible degree*, that a do so. There are accordingly at least four senses of 'perfect' to be distinguished, depending upon whether an object e_1 is said to be perfect, a predicate a , an act of obliging, or God himself. For an object to be perfect with respect to predicate a is to have that predicate primordially obliged to apply to it and actually to do so. And then an object e is said to be perfect in all respects provided all k -place predicates primordially obliged to apply to e_1, \dots, e_k actually do so and e is one of e_1, \dots, e_k . Thus we may let

'PerfObj e ' abbreviate '(Obj $e . (a)(a \text{ PrOblgd } e \supset a \text{ Den } e) . (a)(e_1)(e_2)((a \text{ PrOblgd } e_1, e_2 . (e = e_1 \vee e = e_2)) \supset a \text{ Den } e_1, e_2) \dots (a)(e_1) \dots (e_n)((a \text{ PrOblgd } e_1, \dots, e_n . (e = e_1 \vee \dots \vee e = e_n)) \supset a \text{ Den } e_1, \dots, e_n))$ '.

The use of the numerical parameters ' k ' and ' n ' here is as follows. We let some integer n be the degree of the predicate of highest degree entering into any primordial valuation. Thus no primordial valuation will concern a predicate of degree $>n$. Suppose further that for each $k \leq n$, some primordial valuation concerns a predicate of degree k . In reflecting upon the primordial valuations, then, we need consider only predicates of each and every degree $\leq n$. 'Den' here is the predicate for the k -place denotation, so that ' $a \text{ Den } e_1, \dots, e_k$ ' expresses that the k -place predicate actually does apply to e_1, \dots, e_k in this order.

Perfect objects are those perfect in all possible respects in accord with the primordial obligations. It may indeed be questioned whether there ever has been, is, or will be any object perfect in this sense. But surely there are perfect predicates, namely, those entering into the primordial obligations.

'PerfPred a ' abbreviates '($Ee_1) \dots (Ee_n)(a \text{ PrOblgd } e_1 \vee a \text{ PrOblgd } e_1, e_2 \vee \dots \vee a \text{ PrOblgd } e_1, \dots, e_n)$ '.

Also there are perfect acts, and we might think of these as being just the acts of primordial obliging. We might let

'PerfAct' e ' abbreviate '($Ea)(Ee_1) \dots (Ee_n)((a, \text{ PrOblgd}, e) e \vee \dots \vee (a, \text{ PrOblgd}, e_1, \dots, e_n) e)$ '.

But this would not quite do. The primordial valuations encompass more than the primordial obligations. We let

$$'a \text{ PrPrmtd } e_1, \dots, e_k'$$

express, as previously, that a is *primordially permitted* to apply to e_1, \dots, e_k ;

$$'a \text{ PrPrhbt} e_1, \dots, e_k',$$

that a is *primordially prohibited* from applying to e_1, \dots, e_k ; and

$$'a \text{ PrDtrmnd} e_1, \dots, e_k',$$

that a is *primordially determined* to apply to e_1, \dots, e_k . The primordial permissions include the obligations and determinations, everything (so to speak) being either permitted or prohibited. (Various principles concerning these notions are spelled out in the previous paper.) God's perfection comprises more than merely his acts of obliging; it must include all the permissions and prohibitions as well. Thus we must let

'PerfAct e ' abbreviate rather $'(Ea)(Ee_1) \dots (Ee_n)(\langle a, \text{PrPrmtd}, e_1 \rangle e \vee \langle a, \text{PrPrhbt}, e_1 \rangle e \vee \dots \vee \langle a, \text{PrPrmtd}, e_1, \dots, e_n \rangle e \vee \langle a, \text{PrPrhbt}, e_1, \dots, e_n \rangle e)'$.

It follows then that

$$\vdash (e)(\text{PerfAct } e \supset e \text{ P God}).$$

Note that the perfect acts are not something that God *does* or performs, they are, taken collectively, what God *is*. Or, put another way, we could say that his being *is* his performance. Thus God is *pure act*, his whole constitution consisting of perfect acts. Of course the sum of any two perfect acts might itself be regarded as a perfect act, in which case God is the one and only *maximal* perfect act. If we require that

$$\vdash (e)(e')((\text{PerfAct } e \cdot \text{PerfAct } e') \supset \text{PerfAct } (e \cup e')),$$

presumably

$$\vdash \text{God} = (\text{Fu}'\{e \ni \text{PerfAct } e\}),$$

the perfect acts then being just those constituting his essence.

There is a derivative kind of act, namely, those in accord with God's perfect acts, which might reasonably also be called 'perfect'. But perhaps there are no such acts, the accord never being quite exact. In any case these derivative acts are of no concern to us here.

Let hereafter

' $a \text{ PrVltd} e_1, \dots, e_k$ ' abbreviate ' $a \text{ PrPrmtd} e_1, \dots, e_k \vee a \text{ PrPrhbt} e_1, \dots, e_k$ ',

the valuations consisting of just the permissions (which include both the determinations and obligations) and prohibitions together. Observe that (q.4, a.2) "all the perfections of all things are in God . . ." Literally this may be taken to mean that all the perfect predicates of any object e are in God in the sense of being predicates of some primordial valuation with respect to e . Thus

$\vdash (e)(a)((\text{PerfPred } a.\text{Obj } e) \supset (\text{E}e')(\text{E}e_1) \dots (\text{E}e_n)(\langle a, \text{PrVltd}, e \rangle e' \vee \langle a, \text{PrVltd}, e_1, e_2 \rangle e' . (e = e_1 \vee e = e_2)) \vee \dots \vee \langle a, \text{PrVltd}, e_1, \dots, e_n \rangle e' . (e = e_1 \vee \dots \vee e = e_n))$)).

This law is a logical consequence of the Principle of Primordial Completeness. Let us refer to it as the *Principle of Perfection*. (The Principle of Primordial Completeness, it will be recalled, is that

$\vdash (e_1) \dots (e_k)((\text{Obj } e_1 \dots \dots \text{Obj } e_k) \supset (\text{E}a) a \text{ PrOblgd } e_1, \dots, e_k)$, for $k = 1, 2, \dots, n$).

The primordially good, or good to the highest degree, has been discussed to some extent in the previous paper and need not be repeated here. But “goodness and being are really the same, and differ only in idea” (q.5, a.1) and “in idea being is prior to goodness” (q.5, a.2) in the sense of being definable in terms of it. Further, “any being, as being, is good. For all being, as being, has actuality and is in some sense perfect . . .” (q.5, a.3). This does not say that every being is good or perfect, but only that every being *as being* is *in some sense* perfect. We may interpret this in accord with the Principle of Primordial Completeness to say that every object is covered by at least one primordial obligation, that every object has its perfection, so to speak, at least in God’s envisagement if not in actuality.

The notion of a final cause has not been introduced thus far. But clearly God is the final cause of every object and predicate in the sense that that object or predicate is covered by appropriate primordial valuations. More specifically, just these valuations may be said to be the final causes of any object or predicate, and by summation God himself is the final cause of all objects or predicates (q.5, a.4). Thus

‘*e* FinalCause *e*’ abbreviates ‘ $(\text{E}a)(\text{E}e_1) \dots (\text{E}e_n)(\langle a, \text{PrVltd}, e_1 \rangle e . (e' = e_1 \vee e' = a)) \vee \langle a, \text{PrVltd}, e_1, e_2 \rangle e . (e' = e_1 \vee e' = e_2 \vee e' = a)) \vee \dots \vee \langle a, \text{PrVltd}, e_1, \dots, e_n \rangle e . (e' = e_1 \vee \dots \vee e' = e_n \vee e' = a))$ ’,

and

‘God FinalCause *e*’ abbreviates ‘ $(\text{E}e)e$ FinalCause *e*’.

Then of course we must have that

$\vdash (e)((\text{Obj } e \vee \text{PredCon}_1 e \vee \dots \vee \text{PredCon}_n e) \supset \text{God FinalCause } e)$.

Concerning final causation, there is perhaps no more to be said. It is all contained in this last principle. Concerning the good, and the varieties of human good, however, a vast treasure remains of course to be said. The above must suffice here, however, where we are concerned only with the properties of the primordially good. This latter has to do only with the obligations. To discuss the merely human good, the other primordial permissions and the primordial prohibitions must be brought in fundamentally.

The infinitude of God (q.7) has already been commented upon. But

whether this infinitude be countable or non-countable remains an open question. In what sense now may God be said to be *in* all things (q.8, a.1)? “. . . not, indeed as part of their essence, nor as an accident, but as an agent is present to that upon which it acts. For an agent must be joined to that on which it acts immediately, and reach it by its power . . .” Strictly God does not *act* upon anything at all, but still he may be said to be the *agent* of all primordial goodness or perfection. Since every object is covered by primordial valuations, every object then has God as an agent. And similarly God is in all places (q.8, a.2) and hence everywhere, places themselves being a species of objects, or at least presumably determined in terms of the objects that occupy them. God is in all places in the sense that they too are covered by primordial valuations. And if the handling of efficient and final causality above is sound, God may also be said to be present in all objects in the sense of being their efficient cause, and also their final cause. “Therefore, God is in all things by His power, inasmuch as all things are subject to His power [as efficient cause]; He is by His presence in all things, inasmuch as all things are bare and open to His eyes [or covered by the primordial valuations]; He is in all things by His essence, inasmuch as He is present to all as the [final] cause of their being.”

Further (q.8, a.4) God is uniquely the efficient and final causes of all objects, so that

$$\vdash (e)((e')(\text{Obj } e' \supset e \text{ Cause } e') \supset e = \text{God})$$

and

$$\vdash (e)((e')(\text{Obj } e' \supset e \text{ FinalCause } e') \supset (e')(\text{Obj } e' \supset \text{God FinalCause } e')).$$

This latter follows immediately from the definition of ‘FinalCause’. The former, however, postulates something genuinely new concerning the relation of efficient causation and is perhaps somewhat dubious.

Movement and change in no way pertain to the primordial valuations as such, so that God must be immutable, if mutability is defined in terms of them (q.9, a.1). Thus if ‘Mut *e*’ expresses that *e* is capable of mutability, presumably it would hold that

$$\vdash (e)(\text{Mut } e \supset \text{Move } e).$$

Hence also

$$\vdash (e)(\text{Mut } e \supset \sim e \text{ P God}),$$

in view of the (naive) principle concerning movement cited above. And further (q.9, a.2), God is the *only* immutable entity, so that we must have also that

$$\vdash (e)(\sim e \text{ P God} \supset \text{Mut } e).$$

This latter is provable from the presumed physical law that

$$\vdash (e)(\text{Obj } e \supset \text{Mut } e).$$

(This law need not violate the supposed abstract character of mathematical entities, for these may be handled as suitable conceptual constructs and do not require the postulation of a separate realm of immutable beings such as sets, classes, functions, and the like.⁷)

The atemporal or eternal character of the primordial valuations has been noted above. In the development of time-theory within the system, all objects are to be given suitable temporal location. Thus the primordial valuations and compounds of them would emerge as the only atemporal entities (q.10, a.3).

The unity of God has already been commented on to some extent. It is interesting that (in q.11, a.3) unity is spoken of in three senses, all of them provided for above. First, of course, as already noted, God exists and "it is impossible that there should be many Gods," so that

$$\vdash E! \text{God.}$$

Secondly, "God comprehends in Himself the whole perfection of being," so that we have both that

$$\vdash \text{God} = (\text{Fu}\{e \ni \text{PerfAct } e\}),$$

and the Principle of Perfection cited above. Thirdly, there is the (valuational) unity of the world. "For all things that exist are seen to be ordered [valuationally] to each other since some serve others." This order is given primordially, every object being ordained with respect to a multiplicity of relations to other objects.

Let us turn now to the questions concerning God's knowledge (q.14). "In God there exists the most perfect knowledge . . . Hence knowledge is not a quality in God, nor a habit; but substance and pure act" (a.1). According to this, God's knowledge, i.e., the kind of knowledge that God has, is of everything covered in the primordial envisagement. It is thus pure act. Further (a.2) "God understands [or knows] Himself through Himself" and (a.3) "knows Himself as much as He is knowable; and for that reason He perfectly comprehends Himself." God's knowledge is thus *sui generis* and hence we may define 'God Knows e ' in its own right and not as an instance of ' e Knows e ' for *variable* ' e '. To accommodate all instances of God's knowledge, we must let 'God Knows e ' express that e is one of the objects or predicates entering into the primordial envisagement in one way or another. Further, it must be defined so as to include God himself among the objects of knowledge. Thus we may let

$$\text{'God Knows } e \text{' abbreviate } \text{'}((Ea)(Ee_1) \dots (Ee_n)((a \text{ PrVltd } e_1.(e = e_1 \vee e = a)) \vee \dots \vee (a \text{ PrVltd } e_1, \dots, e_n.(e = e_1 \vee \dots \vee e = e_n \vee e = a)) \vee (\text{PerfAct } e \vee e = \text{Fu}\{e' \ni \text{PerfAct } e'\})).$$

7. See "On mathematics and the good," in *Whitehead's Categoreal Scheme*, as well as "On common natures and mathematical scotism," *Ratio*, to appear, and "On set theory and Royce's modes of action," *Transactions of the Charles S. Peirce Society*, vol. XII (1976), pp. 246-252.

Note that we have now as immediate consequences that

$$\begin{aligned} &\vdash (e)(\text{PerfAct } e \supset \text{God Knows } e), \\ &\vdash (e)((\text{Obj } e \vee \text{PredCon}_1 e \vee \dots \vee \text{PredCon}_n e) \supset \text{God Knows } e), \end{aligned}$$

and

$$\vdash \text{God Knows God.}$$

Also *a fortiori*,

$$\vdash (e)((\text{PerfObj } e \vee \text{PerfPred } e) \supset \text{God Knows } e).$$

Somewhat similar remarks apply to ‘God’s intellect’ (q.14, a.4). “It must be said that the act of God’s intellect is His substance . . . His act of understanding must be His essence and His being.” This seems merely to reiterate that

$$\vdash \text{God} = (\text{Fu}\{e \ni \text{PerfAct } e\}),$$

and ‘God’s Intellect’ is merely another way of writing ‘God’. St. Thomas glosses St. Augustine’s ‘God does not behold [know] anything out of Himself’ (*Lib. 83 Quaest.*, q.46 (PL 40, 30)) by saying (q.14, a.5) that this passage “is not to be taken in such a way as if God saw [knew] nothing that was outside Himself, but in the sense that what is outside Himself He does not see [know] except in Himself . . .” Precisely. All perfect acts and fusions of such, all objects, and all predicates are “in” God in the sense of being covered primordially.

All this is of course concerned with God’s knowledge *de re* (of objects) and not *de dicto*. Let us write ‘Knows_{Re}’ hereafter to remind us of this. “Proper knowledge,” however, is *de dicto* and “to have proper knowledge of things is to know them not only in general, but as they are distinct from each other” (q.14, a.6). But things are distinct from one another in having something true of one but not of the other. All that is desired here may be achieved if we let

$$\text{‘God Knows}_{\text{Dicto}} a \text{’ abbreviate ‘(Sent } a.(e)(\text{God Knows}_{\text{Re}} e \supset \lceil \{e' \ni a\} \rceil \text{Den } e) \text{’}.$$

To allow for knowledge *de dicto* (of sentences), this definition can be given only within the metametalanguage, which however contains the metalanguage as a proper part. We then have immediately, in view of the appropriate semantical truth-definition, that

$$\vdash (a)(\text{God Knows}_{\text{Dicto}} a \equiv \text{Tr } a).$$

And hence in particular of course

$$\vdash \sim e_1 = e_2 \supset \text{God Knows}_{\text{Dicto}} \text{ ‘}\sim e_1 = e_2\text{’},$$

where in place of ‘e₁’ and ‘e₂’ any individual constants are inserted. Thus God knows of distinct things that they are distinct. And likewise

$$\vdash (a)(\text{PredCon}_1 a \supset (a \text{ Den } e \supset \text{God Knows}_{\text{Dicto}} (\widehat{a} \text{ ‘}e\text{’})),$$

where in place of ‘e’ an individual constant is inserted. Thus God knows of

any particular e precisely the properties (so to speak) that pertain to it. In this way God may be said to know the *essence* of e , that essence being just the predicates that truly apply to it.⁸ We may define

$$\text{'God Knows}_{Ess} e \text{' as } (a)(a \text{ Den } e \supset \text{God Knows}_{Dicto} (\widehat{a} \text{'e'})),$$

where in place of 'e' an individual constant is inserted. Whence we have that

$$\vdash \text{Obj } e \supset \text{God Knows}_{Ess} e.$$

And similarly for predicates also.

"In the divine knowledge there is no discursiveness" (q.14, a.7) in the sense of temporal succession, the primordial valuations and the semantical truth-concept being entirely atemporal. "God does not see all things in their particularity or separately, as if He looked first here and then there; but He sees all things [in their particularity] together at once" (St. Augustine, *De Trin.*, XV, 14 (PL 42, 1077)). Further, "it is manifest that God causes things by His intellect . . . and hence His knowledge must be the cause of things" (q.14, a.8). Clearly, in view of theorems already at hand, we have that

$$\vdash (e)(\sim e \text{ P God } \supset (\text{God Knows}_{Re} e \equiv \text{God Cause } e))$$

and

$$\vdash (e)((\text{Obj } e \vee \text{PredCon}_1 e \vee \dots \vee \text{PredCon}_n e) \supset (\text{God Knows}_{Re} e \equiv \text{God FinalCause } e)).$$

"Whatever . . . can be made, or thought [q.14, a.9], or said by the creature, as also whatever He Himself can do, are all known to God, although they are not actual. And to this extent it can be said that He has knowledge even of things that are not." Now the only thing that is not actual is the null individual, according to the logical theory presupposed here, but it may be spoken of under different linguistic descriptions.⁹ The null individual taken under a given description (Frege's *Art Des Gegebenseins*) is an intentional object. But these too may be included in the primordial valuations and thus subject to God's knowledge. (The technical details will be omitted.)

"Whoever knows a thing perfectly must know all that can occur to it. Now there are some good things to which corruption by evil may occur. Hence God would not know good things perfectly, unless He also knew evil things" (q.14, a.10). Where 'Evil e ' is suitably defined to express that e is either evil primordially (and thus prohibited) or by corruption, we surely would have that

$$\vdash (e)(\text{Evil } e \supset \text{God Knows}_{Re} e).$$

8. This notion of essence is due to Whitehead.

9. Cf. G. Frege, "Über Sinn und Bedeutung," paragraph 2, and *Begriffsschrift*, §8.

That God knows singular things (q.14, a.11) has already been established. And also that he knows infinite things (q.14, a.12), e.g., his own valuations, as well as future contingent things (q.14, a.13). That "God knows all enunciations that can be formed" (q.14, a.14) is contained in the doctrine of predicates above. The primordial valuations cover in one way or another all predicates, everything enunciable—every sentence—being so by means of predicates.

Just as God is immutable, so is his knowledge (q.14, a.15). Thus not only must we have that each item of God's knowledge is immutable,

$$\vdash (e)(a)((\text{God, Knows}_{\text{Dicto}}, a) e \supset \sim \text{Mut } e),$$

but also that it is immutable as a whole,

$$\vdash (e)(e = (\text{Fu}\{e_1 \ni (\text{Ea})(\text{God, Knows}_{\text{Dicto}}, a)e_1\}) \supset \sim \text{Mut } e).$$

Ideas on the present account are regarded as entities taken under given linguistic descriptions or *Arten des Gegebenseins*. An idea of what is not actual is the null individual taken under a given description. In this way ideas are posited (q.15, a.1) in the sense of being accommodated in the primordial valuations. The desired modes of description may be placed appropriately in the valuational predicates wherever needed. Many ideas are thus present in the divine mind (q.15, a.2), even many ideas of one and the same object. And further, ideas of all things whatsoever (q.15, a.3) are included, even *all* ideas of all things whatsoever, there being no ideas not enunciable.

A few further remarks on truth, which "resides primarily in the intellect, and secondarily in things according as they are related to the intellect as their source" (q.16, a.1). Let us consider only the divine intellect. Recall that

$$\vdash (a)(\text{God Knows}_{\text{Dicto}} a \equiv \text{Tr } a),$$

and hence (q.16, a.5),

$$\vdash \{a \ni \text{God Knows}_{\text{Dicto}} a\} = \{a \ni \text{Tr } a\} = \text{Tr}.$$

If the divine intellect is identified with the virtual class of what God knows *de dicto*, then his intellect is simply truth itself. Secondarily, truth "resides in things according as they are related to the intellect . . ." For truth to "reside" in a thing is for some predicate to apply truly (denote) that thing. Our theorem above, that

$$\vdash (a)(a \text{ Den } e \equiv \text{God Knows}_{\text{Dicto}} (\widehat{a}'e')),$$

together with the observation that

$$\vdash (a)(\text{God Knows}_{\text{Dicto}} (\widehat{a}'e') \equiv \text{Tr } (\widehat{a}'e')),$$

show that any given truth concerning *e* resides in *e* as related to God, God of course being its "source" as both final and efficient cause.¹⁰

Truth, moreover, is eternal in the sense of being identical with God's intellect, ". . . because only the divine intellect is eternal, in it alone truth has eternity" (q.16, a.8). And similarly (a.9) "the truth of the divine intellect is immutable." Note how well this latter accords with the modern semantical notion of truth, which likewise is atemporal. This does not mean, of course, that 'true today', 'false tomorrow', and the like, may not be accommodated, but only that they are somewhat secondary, the fundamental notion being atemporal.¹¹

The living God "has life most perfect and eternal, since His intellect is most perfect and always in act" (q.18, a.4). In this sense of course life can indeed properly be attributed to God on the basis of the foregoing. Further, "whatever is in God as understood is the very living or life of God. Now, therefore, since all things that have been made by God are in Him as things understood, it follows that all things in Him are the divine life itself" (q.18, a.5). Therefore "all things are life in God." To be life, or living in this sense, then, is merely to be covered primordially.

Just "as God's knowledge is His being, so is His willing" (q.19, a.1). God's will is included in His intellect, so to speak. Further, "God wills not only Himself, but also things other than Himself" (q.19, a.2), just as, in accord with what has been established above, he knows not only himself but other things also. God's will may be wholly characterized in terms of the primordial valuations, just as his intellect is.

There are two senses in which God may be said *necessarily* to will what he wills. "God wills the being of His own goodness necessarily" (q.19, a.3) in the sense of *absolute* necessity. This is the kind of willing that attaches only to the primordial *obligations*, all goodness having their source in them. "But [also] God wills things other than Himself in so far as they are ordered to His own goodness as their end." This kind of willing is necessary *by supposition* and attaches to the primordial valuations that are neutral, so to speak, i.e., those that are neither prohibited or obliged. (Note that even a prohibition is an obligation with respect to the negation of its predicate.) Thus everything that God wills is seen to be willed necessarily in one or the other of these two senses. And thus (q.19, a.10) God has no free choice with respect to what he wills with absolute necessity, but only with respect to what he wills necessarily by supposition.

10. The comments here concerning God's knowledge, as well as those concerning efficient and final causation, are of course much more Thomistic than Whiteheadian, and part from the account in "On God and primordially."

11. As in Tarski's famous *Der Wahrheitsbegriff in den Formalisierten Sprachen* (tr. in *Logic, Semantics, Metamathematics*, Clarendon Press, Oxford (1956), and the author's *Truth and Denotation*, The University of Chicago Press, Chicago (1958)). See also the author's *Events, Reference, and Logical Form* and *Semiotics and Linguistic Structure*, The State University of New York Press, Albany, to appear.

Although God, or his intellect or will, is the cause of things other than himself (q.19, a.4), "in no wise has the will of God [itself] a cause" (q.19, a.5), as is evident from the principle above that

$$\vdash \sim (Ee)e \text{ Cause God.}$$

Note also that "the will of God must needs always be fulfilled" (q.19, a.6), everything not primordially prohibited being at least permitted (even if not obliged). And of course "the will of God is entirely unchangeable" (q.19, a.7), because both God and his intellect are. Does the will of God impose necessity on the things willed (q.19, a.8)? On some things, but not all. What is primordially determined is presumably imposed necessarily, but not what is obliged or merely permitted. The primordially evil—mortal sin—is that which is primordially prohibited. And as we have seen, God should not be said to will this. "He in no way wills the evil of sin" (q.19, a.9). All other evils, however, are embraced in the primordial permissions.

The primordial valuations, it will be recalled, are subdivided into determinations, obligations (including the determinations), permissions (including the obligations), and prohibitions. The obligations that are not determinations are *desires*, and the permissions that are not obligations are primordially *neutral*—'tolerations', they might be called. There are two kinds of prohibitions, based on either the determinations or the desires. (The predicate *a* is said to be primordially prohibited of e_1, \dots, e_k , recall, if and only if its negative $\lceil -a \rceil$ is primordially obliged (determined or desired) to apply to e_1, \dots, e_k .) Those based on the desires might be called 'detestations', those on determinations 'impossibilia'. But there is no need for the impossibilia, and it is doubtful if there are any. Now the "five signs of will" (q.19, a.12) may all, it would seem, be fitted into this classification. The matter is complex and needs a good deal of spelling out. Very roughly and preliminarily, the Thomistic *operations* may be identified with the determinations; the *persuasions* with the desires, both (positive) *precepts* and *counsels* being subclasses of these; the non-obligatory *permissions* with the tolerations; and the *prohibitions*, including negative precepts, with the detestations. The structure of the divine will is complex in diverse ways, but can, it would seem, be fully characterized in terms of the foregoing.

There is of course much more to be said concerning the "real internal constitution" of God and of his relation to the creatures. The foregoing must suffice for the present, however, in getting us started in what it is to be hoped is the right direction, using some of the treasures of modern logic and semantics as our Virgilian guide.

In this brief discussion of some of the primary properties of primordially, there has been no attempt to push the theory in the direction of St. Thomas, except perhaps in the handling of causation, which no doubt is the weakest part of the foregoing. It is remarkable that, starting with a very different point of view, gained in trying to characterize precisely the logic of the

primordial valuations, we end up with a view essentially that of the Angelic Doctor. It is almost incredible that he could have characterized with such precision and depth these primordial properties on the basis of so narrow an Aristotelian logic, on the one hand, and an inadequate physics and cosmology, on the other. The real greatness of St. Thomas's conception of God shines forth in spite of the insufficiencies of its scientific and philosophical foundation.

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