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**Some Remarks on the Ontological Arguments of Leibniz and Gödel**

Beschäftigung mit der Philosophie, selbst wenn keine positiven Ergebnisse herauskommen (sondern ich ratlos bleibe), ist auf jeden Fall wohltätig. Es hat die Wirkung (dass „die Farbe heller“), d.h., *dass die Realität deutlicher als solche erscheint.*  
– Kurt Gödel<sup>1</sup>

While scholars of Leibniz’s thought are certainly familiar with his arguments for the existence of God, it has only recently become more widely known that the past century’s greatest logician, Kurt Gödel, also proposed an argument for the existence of God that bears striking similarities to Leibniz’s ontological arguments<sup>2</sup>. In this paper, I shall sketch the arguments of Leibniz and Gödel, comment on their logical structure, and analyze the fundamental notion of “divine essence” therein. Ultimately, I shall show that both Leibniz and Gödel appeal to Spinozistic interpretations of divine essence and that Gödel rejects the critiques of Kant and Frege of the ontological argument, allowing necessary existence to be included in the essence of God<sup>3</sup>.

**I**

Before examining Gödel’s argument, I would like to take a few moments to analyze some of the relevant features of Leibniz’s discussion of the ontological argument. While in Paris in the 1670s, Leibniz began to study the works of Descartes, and by 1675-76 had written several critiques of features of Descartes’ system, including the ontological argument as found in the Fifth *Meditation*. And during a visit with Spinoza, on his journey to Hanover, Leibniz not only discussed this topic with Spinoza but also quickly jotted down another version of his criticism and supplementary argument. If we are to believe Leibniz, Spinoza found the argument sound. But Spinoza, of course, had every reason to be impressed, for Leibniz’s contribution to the history of the ontological argument was significant. As Leibniz himself writes, “*Ens cui omnia competent attributa affirmativa possibile esse, ostendi forte primus. Hinc porro sequitur ipsum existere nam et existentia est attributum affirmativum*” (A VI, III, 395-96).

Leibniz’s criticism of Descartes’ version of the ontological argument is that it has not been shown that an *ens perfectissimum*, or a being possessing all perfections, is even possible. There are two problems at hand. First, and most prominent in his presentation, is Leibniz’s observation that there are some concepts expressing superlatives that seem meaningful but that, on closer inspection, prove to be impossible: for example, the greatest number or the greatest velocity. Second, and perhaps a subsidiary point, Leibniz believes that “non possimus facile judicare de rei possibilitate,

1 From his notebook “Phil XIV” in Kurt Gödel: *Collected Works* (hereafter GCW), vol. III, ed. S. Feferman et al., Oxford, 1995, p. 432.

2 Gödel’s “Ontological proof”, GCW III, 403-04. The first publication of this argument, along with commentary, is in J.H. Sobel: “Gödel’s Ontological Proof”, in: J.J. Thomson (ed.): *On Being and Saying: Essays for Richard Cartwright*, Cambridge, MA, 1987, pp. 241-61.

3 In his “Gödel’s Ontological Proof”, Sobel writes, “The system [of Gödel] is Leibnizian in spirit and Spinozistic in axiomatic form” (p. 241). I shall show that, on Sobel’s own analysis, there is just as much reason to hold Gödel’s system to be Spinozistic in spirit.

ex cogitabilitate eius requisitorum, quando singula eius requisita cogitavimus, neque in unum conjunximus” (A VI, III, 462-63). Leibniz’s strategy is to prove that it is possible for a being to possess all perfections and that *ipso facto* that being *must* exist. In other words, Leibniz argues that if it is *possible* that an *ens perfectissimum* exist, then that being *necessarily* exists. As we shall see, this idea is at the root of Gödel’s ontological argument; it also *appears* to be one of the signal (and notorious) theorems of the modal logic S5 ( $MNp \supset Np$ )<sup>4</sup>.

According to Leibniz, God, as the *ens perfectissimum*, will first of all be understood as a being *having* all perfections; and, given this, an *ens perfectissimum* will be possible if it is possible for some being to possess all perfections. In the best-known text relating to the ontological argument, “Quod ens perfectissimum existit”,<sup>5</sup> Leibniz defines a “perfection” as a “qualitatem simplicem quae positiva est et absoluta seu quae quicquid exprimit sine ullis limitibus exprimit” (A VI, III, 578). And this definition in turn allows him to argue that there can be no inconsistency among perfections. For, as Leibniz argues, a perfection, in being simple and positive, is unanalyzable and incapable of being enclosed by limits. More than this, the proposition “A and B are incompatible” is neither capable of being demonstrated, nor would it be self-evident, even if it were true. Therefore, it is not necessary that some two perfections are incompatible, or rather, it is possible that any and all perfections are in fact compatible. Insofar as this is the case, Leibniz reasons, a subject of all perfections, or an *ens perfectissimum*, is indeed possible. But, of course, this argument by itself is not sufficient to determine that God necessarily exists. Leibniz must add the claim that existence is itself a perfection, so that a being having all perfections, an *ens perfectissimum*, may be said to exist.

There are, of course, a few problems with this formulation of the argument. First, Leibniz’s “Quod ens perfectissimum existit” does not prove that the conjunction of all perfections is exemplified necessarily<sup>6</sup>. It could, after all, be a contingent fact that they are conjoined in an *ens perfectissimum*. Second, it could be the case that all perfections are conjoined in a being, but that existence is not among the perfections and so, the *ens perfectissimum* remains in the realm of non-actual possibles<sup>7</sup>. Indeed, as Leibniz’s exchange with Arnold Eckhard in April 1677 makes clear, Leibniz was obviously not entirely convinced of his claim that existence was to be numbered among the perfections<sup>8</sup>. Nevertheless, to complete the argument, Leibniz must actually show that existence, or rather *necessary existence*, is among the perfections<sup>9</sup>. And he attempts exactly this in other works of the period. For example, in a short piece perhaps from the end of 1676, he writes, “Idem quoque est Ens necessarium, et Ens ex cuius essentia sequitur existentia; Ens scilicet necessarium est, quod necessario existit, ita ut ipsum non existere implicet contradictionem, atque adeo cum conceptu seu essentia huius Entis pugnet” (A VI, III, 583). While this might seem to repeat the standard Anselmian or Cartesian line concerning our *a priori* knowledge of God’s existence, I think we can

4 I shall follow Gödel here, who used the notation of “N” and “M” for the necessity and possibility operators, rather than the now more common box and diamond.

5 Published also in GP VII, 261-62 and Gottfried Wilhelm Leibniz: *Philosophical Papers and Letters*, ed. by L.E. Loemker, 2nd edition, Dordrecht, 1969, pp. 167-68.

6 Robert Merrihew Adams makes this point in his Introductory note to Gödel’s Ontological Proof. See GCW III, 394-95.

7 One might add to this list of problems, third, that Leibniz never proves that there are any simple (positive) properties at all and, fourth, that the argument that any two properties *A* and *B* cannot be demonstrated to be incompatible does not prove that *A* and *B* are in fact incompatible. (See G. Oppy: *Ontological Arguments and Belief in God*, Cambridge, 1995, pp. 25-26.) I don’t regard these criticisms as terribly serious.

8 See A II, I, 311-14, 317-24.

9 This move, of course, opens Leibniz’s arguments up to the charges of Kant and Frege, who deny that existence is a property. This critique is old hat. For a thought-provoking rejection of the Kantian and Fregean arguments, see J. W. Forgie: “Existence Assertions and the Ontological Argument”, in: *Mind* 73 (1974), pp. 260-62, and “Frege’s Objection to the Ontological Argument”, in *Noûs* 6 (1972), pp. 251-65.

find a deeper and more interesting point here. Leibniz seems to be giving us an argument to explain why exactly existence is a perfection: if it is the case that a necessary being is the *same* thing as a being whose existence follows from its essence, then existence must in fact be one of its essential properties. Leibniz continues in this short reflection, “Itaque de conceptu seu Essentia eius est existentia. Hinc habemus praeclarum Theorema, quod est fastigium doctrinae Modalium, et quo transitur mirabilis ratione, a potentia ad actum. Si Ens necessarium est possibile, sequitur quod existat actu seu quod tale Ens actu reperiat in Universo” (A VI, III, 583). The “pinnacle of Modal Theory” that Leibniz mentions here is none other than the principle of S5: “If possibly necessarily  $p$ , then necessarily  $p$ ”.

Here it is important to notice that Leibniz has in fact given us a second kind of ontological argument. More precisely, though Leibniz begins his reflections on Descartes’ version of the ontological argument, which is itself a version of Anselm’s argument, *as it is found in Proslogion* Chapter Two, he can be seen to be making the same kind of move that Anselm makes in Chapter Three of the *Proslogion*. Nevertheless, this second argument still differs from the Anselmian argument, and it is this version and this version alone that truly can be said to appeal to the S5 theorem. After all, while Leibniz does attempt to prove the possibility of an *ens perfectissimum* and moves from the possibility proof to the claim that the *ens perfectissimum* exists, it almost seems fairer to represent this argument simply as “If possibly  $p$ , then  $p$ ”. That is, if an *ens perfectissimum* is possible, then an *ens perfectissimum* exists. But this cannot be right. For “If possibly  $p$ , then  $p$ ” is, in fact, simply the converse of the “Axiom of Possibility” (“If  $p$ , then possibly  $p$ ”), which is not regarded as valid. Or else we ought to regard this argument as depending upon an axiom of the modal logic B: “If possibly necessarily  $p$ , then  $p$ ”<sup>10</sup>. Now, even if we say that the *ens perfectissimum* has existence among its perfections, we still have not shown its *necessary* existence, that is, why it might not simply be contingently instantiated. All of this points to the unique status of God in this kind of argument. Therefore, Leibniz must show that the *ens perfectissimum* has within its essence *necessary* existence, and this allows him to use the stronger and more interesting claim of S5: if it is possible that a being necessarily exist (or has necessary existence within its essence), then the being necessarily exists. Leibniz was, of course, aware that he was working on two different versions of the ontological argument and claims that of the two the second — that which revolves around necessary existence — is superior to the first, which revolves around the idea of *ens perfectissimum*<sup>11</sup>. In the next section, we shall see how Gödel brings these two versions together.

Finally, it is important to remark upon the ways in which Leibniz’s reflections on the ontological argument are influenced by his necessitarian nemesis, Spinoza. In a different text from 1676, Leibniz gives another argument to show that a being having all perfections must *necessarily* exist (and have existence among its perfections), and, although he appeals to the Principle of Sufficient Reason, the argument seems quite Spinozistic: either the *ens perfectissimum* has a reason for existing from itself or from something else; but everything can be understood in the *ens perfectissimum* itself, and so it cannot have a reason for existing from something else; therefore, it must have its reason for existing from itself (A VI, III, 572)<sup>12</sup>. And Leibniz continues in this metaphysical sketch to say the following: “omne attributum mere affirmativum est infinitum; seu quantum maximum esse potest, seu continet omnia sui generis. Plura sunt necessario attributa

10 This is a point mentioned by R.M. Adams: “The Logical Structure of Anselm’s Arguments”, in: *The Philosophical Review* 80 (1971), pp. 28-54.

11 See, for example, Leibniz’s exchange with Eckhard (A II, I, 312) and his letter to Bierling (GP VII, 490). For more on the different strands of thought in Leibniz’s attempts to formulate an adequate version of the ontological argument, see R.M. Adams: *Leibniz: Determinist, Theist, Idealist*, Oxford, 1994, especially Chs. 4-6. I have also profited from K. Harrelson: *The Ontological Argument from Descartes to Hegel* (forthcoming), Ch. 5.

12 This is a point also made in W. Janke: “Das Ontologische Argument in der Frühzeit des Leibnizschen Denkens (1676-78)”, in: *Kant-Studien* 54 (1963), pp. 267-68.

affirmativa prima, quia si unum tantum esset, una tantum res intellegi posset... Res omnes non ut substantias sed modos distingui, facile demonstrari potest, ex eo quod quae radicaliter distincta sunt, eorum unum sine altero perfecte intellegi potest, id est omnia requisita unius intellegi possunt, quin omnia requisite alterius intelligantur. At vero hoc ipsum non est in rebus, quia enim Ultima ratio rerum unica est, quae sola continet aggregatum omnium requisitorum, omnium rerum, manifestum est, omnium rerum requisita esse eadem; adeoque et essentiam, posito essentiam esse aggregatum omnium requisitorum primorum, omnium ergo rerum essentia eadem, ac res non differunt nisi modo, quemadmodum Urbs spectata ex summo loco differt a spectata ex campo” (A VI, III, 572-73). This passage is interesting for a number of reasons. First, it echoes the Spinozistic idea that God’s attributes are infinite because there is nothing of the same genus to limit them. And this, in turn, allows one to assert the actual infinitude of God. But, more important, one can see here that Leibniz concedes that, on the hypothesis of a being whose essence contains all positive properties, the essence of all things would be the same and that they would differ only modally. This is a strong claim, and Leibniz will back away from it. But, as we shall see later with respect to Gödel, on a certain conception of the essence of God, there seems to be an inexorable collapse into Spinozism<sup>13</sup>.

## II

Gödel was a great admirer of Leibniz and spent considerable time studying Leibniz’s thought, especially in the period of 1943-46, when Gödel made his first notes on the ontological argument<sup>14</sup>. He certainly knew Leibniz’s ontological argument from “Quod ens perfectissimum existit” and the cryptic presentation in §45 of the *Monadology*. In this section, I shall recount Gödel’s argument as we have it in his *Collected Works* and compare it with the work of Leibniz. I shall also examine some recent interpretations of the proof. Given that he thought so highly of Leibniz and was himself an avowed theist (and idealist)<sup>15</sup>, it might not be so surprising that he should present an argument superficially resembling Leibniz’s.

Gödel’s argument does indeed bear some important similarities with Leibniz’s argument<sup>16</sup>. Like Leibniz, Gödel tries to show that a being of maximum perfection is possible and that, if this being is possible, then it exists necessarily. But the primitive notion in Gödel’s argument is that of a “positive property,” which, as we shall see, differs from a “perfection” in Leibniz’s sense. Gödel’s proof begins with the notation for a positive property “ $P(\varphi)$ ” and the following two axioms:

Axiom 1.  $P(\varphi).P(\psi) \supset P(\varphi.\psi)$

Axiom 2.  $P(\varphi) \vee P(\sim\varphi)$

While the second axiom is perhaps not very exciting — that either a property or its complement is positive — the first axiom does merit some comment. For it brings to light an important difference between Gödel’s positive properties and Leibniz’s perfections. Given that Leibniz holds that a

13 The threat of one substance to Leibniz’s metaphysics is, I think, real. See J.A. Cover and J. O’Leary-Hawthorne: *Substance and Individuation in Leibniz*, Cambridge, 1999, Ch. 7.

14 See Hao Wang: *Reflections on Kurt Gödel*, Cambridge, MA, 1987, where Leibniz is described as Gödel’s “hero” (p. 2).

15 Gödel wrote the following answer in an autobiographical questionnaire: “My belief is *theistic*, not pantheistic, following Leibniz rather than Spinoza.” Quoted in Wang, *Reflections*, p.18.

16 In what follows, the definitions, theorems and axioms are taken directly from GCW III, 403-404. The reader is encouraged to consult Sobel’s, “Gödel’s Ontological Proof”, which also contains a transcription of Dana Scott’s helpful notes on the argument, and M. Fitting: *Types, Tableaus, and Gödel’s God*, Dordrecht, 2002, Ch. 10, which has a useful informal presentation of the argument.

perfection is a simple property or quality, he cannot argue that a conjunction of perfections is itself a perfection — even if the being that has all perfections is an *ens perfectissimum*. Further, Gödel gives us a seemingly enigmatic or perhaps trivial idea of what he means by a positive property. As he puts it, “Positive means positive in the moral aesthetic sense (independently of the accidental structure of the world)”<sup>17</sup>. Gödel next gives his definition of God or rather of being God-like, which appeals to quantification over properties:

Definition 1.  $G(x) \equiv (\varphi)[P(\varphi) \supset \varphi(x)]$

That is, something is God-like if and only if it has all positive properties. Gödel’s definition of the essence of  $x$  comes next:

Definition 2.  $\varphi \text{ Ess. } x \equiv (\psi)[\psi(x) \supset N(y)[\varphi(y) \supset \psi(y)]]$

The point here is that an individual’s essence entails each of its properties, and, insofar as this is the case, it is correct to say that “Gödel’s essences are like Leibniz’s complete individual concepts”<sup>18</sup>. Moreover, it should be clear that, if essences exist at all, they are unique to their individuals. Gödel makes the further claim in Axiom 3 that, if a property is positive, it is necessarily so, and if not positive, then likewise necessarily so<sup>19</sup>. I take it that this is, in part, what Gödel means when he claims that a property is positive independent of the accidental structure of the world<sup>20</sup>. From this definition and axiom, Gödel moves on to establish his first theorem that, if something is God-like, then being God-like is its essence:

Theorem.  $G(x) \supset G \text{ Ess. } x$

Further, if something is God-like, then it has not only every positive property, but only positive properties. Necessary existence will be defined in terms of essences: a thing may be said to have necessary existence if, for each essence it has, it is necessary that something has this essence. Or rather, an individual has necessary existence just in case its essence is necessarily instantiated.

Definition [3].  $E(x) \equiv (\varphi)[\varphi \text{ Ess. } x \supset N(\exists x)\varphi(x)]$

And, of course, according to Gödel, necessary existence is a positive property; hence Axiom 4:  $P(E)$ . It is worth pointing out that after the claim quoted above – “Positive means positive in the moral aesthetic sense (independently of the accidental structure of the world)” – Gödel adds: “Only then [are] the axioms true”. From this point the proof proceeds relatively quickly, invoking S5, as in Leibniz’s second and more properly modal argument. Gödel establishes further:

17 GCW III 404. Is it acceptable to leave the nature of positive properties so vague? While I shall have more to say about this later, let me simply remark now that I am inclined to David Lewis’s position that the ontological arguer is entitled to whatever standards of greatness he wants. (See D. Lewis: “Anselm and Actuality”, in: *Noûs* 4 (1970), pp. 178-79; repr. in: D. Lewis: *Philosophical Papers*, Vol. I, Oxford, 1983, p. 13.)

18 Sobel, “Gödel’s Ontological Proof”, p. 259, n. 6.

19 As Gödel puts it: Axiom 3.  $P(\varphi) \supset NP(\varphi)$   
 $\sim P(\varphi) \supset N\sim P(\varphi)$

20 See A. Hazen: “On Gödel’s Ontological Proof”, in: *Australasian Journal of Philosophy* 76:3 (1998), p. 364. This is also the way that Dana Scott puts it: “Being a positive property is logical, hence, necessary” (in Sobel: “Gödel’s Ontological Proof”, p. 258.)

Theorem.  $G(x) \supset N(\exists y)G(y)$   
 hence  $(\exists x)G(x) \supset N(\exists y)G(y)$ ;  
 hence  $M(\exists x)G(x) \supset MN(\exists y)G(y)$ .  
 $M(\exists x)G(x) \supset N(\exists y)G(y)$ .

Informally, if something is God-like, then necessarily there exists something that is God-like; therefore, if there exists a God-like thing, then necessarily there is something that is God-like. According to Gödel, since “ $M(\exists x)G(x)$  means the system of all positive properties is compatible”<sup>21</sup>, it is possible that there is something that is God-like. Or as he puts in his final axiom,

Axiom 5.  $P(\phi). \phi \supset_N \psi : \supset P(\psi)$ , which implies  
 $x = x$  is positive  
 $x \neq x$  is negative.

If this is so, then it is possible that there is necessarily such a being. And, according to the S5 theorem to which Leibniz likewise appealed, if it is possible that there is necessarily a God-like being, then, necessarily, there is such a God-like being. Further, while Gödel does not address the point directly, it should be clear that, because the essence of a God-like being entails *all* positive properties, God is unique<sup>22</sup>.

Yet, there seem to be some important differences between the proofs of Gödel and Leibniz<sup>23</sup>. As already mentioned, Gödel merely asserts the compatibility of positive properties, whereas Leibniz had actually tried to make an argument for this point, based on the idea that perfections were ultimately to be simple and unanalyzable and that all purely positive qualities must be consistent. Gödel, on the other hand, never gives us a *reason* why positive properties cannot be inconsistent. Nevertheless, I would like to suggest that, despite the real and apparent differences between Gödel and Leibniz, Gödel’s proof actually *combines* aspects of Leibniz’s two versions of the ontological argument. For it depends upon the compatibility of all positive properties in some being and claims necessary existence as a positive property — part of the essence of God.

Gödel’s reflections in his notebooks suggest other, more interesting, parallels with the thought of Leibniz. First, it seems that Gödel was clearly moved by a well-known Leibnizian doctrine: the presumption to existence, that is, the idea that everything strives towards existence and *will* exist unless there is a reason for it not to exist. Thus Gödel: “Wenn der Begriff notwendiger Existenz widerspruchsfrei ist, so gibt es Dinge, für die er gilt”<sup>24</sup>. In other words, if there is no contradiction within the concept, it will be instantiated. But on this point it is also worth recalling Spinoza, who makes the same argumentative move: “...Ex quibus sequitur, id necessario existere, cujus nulla ratio, nec causa datur, quae impedit, quominus existat. Si itaque nulla ratio, nec causa dari possit, quae impedit, quominus Deus existat, vel quae ejus existentiam tollat, omnino concludendum est, eundem necessario existere”<sup>25</sup>. Second, there is a subtler commonality, showing the extent that thinking through Leibniz’s argument must have brought Gödel close to Spinoza, in the way that Leibniz was: “Die Überlegung: nach dem Satz vom zureichenden Grund muß die Welt eine Ursache haben. Dies muß an sich notwendig sein (sonst würde sie wieder eine Ursache verlangen). Beweis der Existenz eines apriorischen Gottbeweises (der darin enthaltene ist es nicht)”<sup>26</sup>. While

21 GCW III, 403.

22 In other words, there cannot be more than one God-like being.

23 For more on this subject, see Adams’s Introductory note to Gödel’s Ontological Proof, GCW III, 388-402.

24 GCW III, 430

25 E1p11d (G II 53).

26 GCW III, 430.

this sounds simply like a version of the cosmological argument, I think that, to the extent that it demands that the reason for the existence of the world must itself be necessary, it contains elements of Leibniz's second argument, in which necessary existence was attributed to the essence of God<sup>27</sup>. But Spinoza, too, argues in a very similar way as well in *Ethics* I, Proposition 11. Perhaps we should not be surprised by these similarities: the premises and exigencies of the ontological argument force one in certain directions, and one quickly comes upon travelling companions that one might have wanted... or not.

While Gödel's proof can be said to combine aspects of Leibniz's two versions of the ontological argument and have certain virtues, it is not necessarily the case that Gödel's argument is without its faults. In the first and perhaps best-known account of Gödel's ontological argument, Sobel offers us a number of objections. First, in Gödel's proof, a God-like being has every positive property (and only positive properties); but it is not just true for God but for *every* being that it has, for every property, either it or its complement. And Sobel continues with the perhaps standard complaint with respect to ontological arguments that the God that is shown to exist necessarily need not be the God that a theist should want to worship. In the end, we are to wonder whether the traditional attributes of God are to be included among the positive properties or their negations<sup>28</sup>. More interestingly and importantly, however, Sobel attempts to show that a "modal collapse" follows from the axioms, so that every proposition that is true is necessarily so. To see this, consider some true proposition *P*. If *x* is God-like, then it has the property of being such that *P* is true. But, given Gödel's system, *x*'s being God-like entails necessarily all its properties. And, therefore, any true proposition is necessarily true. It is for this reason (I think) that Sobel claims that Gödel's argument is Spinozistic in axiomatic form<sup>29</sup>. But if this interpretation were correct it would seem to be fairer to say that Gödel's system is Spinozistic in spirit and Leibnizian in form, for it would be Spinoza's spirit of determinism and necessitarianism that is preserved due to the form of Leibnizian argumentation and the appeal to similar axioms and definition of essence or complete individual concept.

In response to Sobel's characterization of Gödel's argument, Anderson has attempted to salvage much of its spirit and rigor<sup>30</sup>. Concerning the first objection, the simplest and best response (heretical as it might sound) might simply be to deny that God has *only* positive properties. We might consider classing some properties as indifferent, and perhaps some of these will be properties had by the God of traditional theistic beliefs<sup>31</sup>. But the more substantial worry is that Gödel's argument is subject to a modal collapse. And on this subject his argument has been aided by Anderson, who provides us with alternative axioms that are to remove the threat of Spinozism. Not surprisingly, he focuses on the notion of essence and God-likeness. An essence\* will be such that, for all essences\* and all properties, *x* has necessarily (or essentially) a property if and only if the essence\* entails that property<sup>32</sup>. And something will be considered God-like\* if and only if it has as

27 It also provides evidence for Kant's claim that the cosmological argument is simply a disguised version of the ontological argument. See Kant: *Kritik der reinen Vernunft* A 607/B 635.

28 Sobel, "Gödel's Ontological Proof", p. 250. Though on this score, let me again say that I agree with David Lewis. See n. 17 above.

29 Sobel, "Gödel's Ontological Proof", p. 241 and pp. 253-54. See also Sobel: *Logic and Theism*, Cambridge, 2004, Ch. IV.

30 C.A. Anderson: "Some Emendations of Gödel's Ontological Proof", in: *Faith and Philosophy* 7:3 (1990), pp. 291-303.

31 Anderson, "Some Emendations", p. 295.

32 In Anderson's formulation:  $\varphi \text{ Ess}^* x =_{\text{df}} (\psi)[N \psi(x) \equiv (\varphi \Rightarrow \psi)]$ . (Anderson, "Some Emendations", p. 302.)

essential properties those and only those properties that are positive<sup>33</sup>. The point of these two new definitions is to avoid the natural corollary of Gödel's definition of essence: "If  $x$  is God-like and has a property, then that property is entailed by the property of being God-like"<sup>34</sup>. According to Anderson, then, we can move through a Gödel-like ontological proof without the threat of the modal collapse that Sobel led us to fear<sup>35</sup>.

While there is much more that must be said about Gödel's argument (and, indeed, about *any* ontological argument that could be logically sound and theologically attractive), a few concluding remarks can be made at this point<sup>36</sup>. First, much of the threat of modal collapse follows from Gödel's definition of essence, which is, as we saw, akin to Leibniz's complete individual concept. In order to avoid the collapse, it appears that we should adopt a definition of essence that is not so strong. For those accustomed to Leibniz-talk, we are encouraged to give up on a "super-essentialist" idea of God. Nevertheless, an interesting theological issue now arises for any theist: Does God have properties that are either non-positive or accidental and that are part of what makes God an object of worship? Second, it should be clear that, on the one hand, Gödel's proof manifests many of the signal features of Leibniz's reflections on this topic. There is the general concern to prove the possibility of a God-like being, to conceive of this being as having an essence that contains all perfections or all positive properties, to include *necessary existence* among those properties and perfections, and to make the move – licensed by a strong theorem of modal logic – from "a necessary being is possible" to "a necessary being exists in actuality". On the other hand, these similarities must not be exaggerated: not only are there some crucial differences between the two regarding the exact essence of God, there is perhaps too strong a tendency to regard Leibniz's arguments as utilizing the *same* modal principles as found in Gödel's proof. Third, we need to notice the roles of some other great, dead philosophers in this story. For example, Gödel was perfectly content to make this kind of argument even after Kant and Frege had so forcefully criticized the idea that existence is a perfection. Why? And for both Gödel and Leibniz the one figure that cast a long shadow over their argument was, in fact, Spinoza, whose necessitarian spirit seems to fill Gödel's system, perhaps even against his will<sup>37</sup>.

33 In Anderson's formulation:  $G^*(x) =_{df} (\varphi)[N \varphi(x) \equiv Pos(\varphi)]$ . (Anderson, "Some Emendations", p. 302.) "Pos( $\varphi$ )" means  $\varphi$  is a positive property. And more, "[i]f a property is positive, then its negation is not positive" (Anderson, "Some Emendations", p. 295).

34 Anderson, "Some Emendations", p. 293.

35 In his *Logic and Theism*, Sobel concedes that these changes avoid modal collapse but remains unsatisfied. See Sobel, *Logic and Theism*, pp. 138-44.

36 This paper is part of a larger study of Leibniz's reflections on modality and metaphysics and of Gödel's proof.

37 Thanks to Kevin Harrelson for a helpful discussion about these issues.