

HOW RELIABLE IS LOGIC?

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The basic laws or principles of logic are commonly said to be three in number: the law of identity, the law of contradiction and the law of excluded middle. They may be set forth in the following form: "If anything is A it is A; nothing can be both A and not A; anything must be either A or not A."¹ Though it may be that the other principles of logic—the principle of the syllogism, the principles of tautology, simplification, absorption, and so forth—cannot be derived from them,² these three are at least the foremost of the laws of thought.³ Moreover, though the other two apparently cannot be derived from it,⁴ writers often mention the law of contradiction when they have logic generally in mind.⁵

What is of interest to us is the fact that orthodox thinkers commonly believe that logic is of unlimited applicability. Though sometimes this faith is tacit, often it is explicit. For example, E. J. Carnell insists on "a rigid application of the law of contradiction" and says that "God does not break the law of contradiction."⁶ Likewise, Francis Schaeffer says, "Historic Christianity stands on a basis of antithesis." By antithesis he means, as he says, "If you have A it is not not-A."⁷ Both of these writers leave the impression that no exception to or modification of these statements is permissible. And N. Geisler argues that "the rationally inescapable is real."⁸

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¹M. R. Cohen and E. Nagel, *An Introduction to Logic*, p. 181. E. R. Emmet, *Learning to Philosophize*, p. 45, states that the laws of logic often "introduce clear-cut distinctions where none are in nature. Indeed to such an extent is this true that logicians talk about the *fallacy* of the excluded middle, supposing that there are always only *two* values, A and not A, true and false, instead of many intervening values. . . . It has been claimed . . . that Chinese is a multivalued language and that as a result the Chinese have been better able to appreciate the intervening shades of grey between the extremes of black and white, and their thought has been more flexible and more tolerant." Though we contend in this paper that logic is not always applicable, to speak of the fallacy of the law of excluded middle is to commit oneself to monism. (If we understand Chinese thought, it is ultimately monistic.) Cf. J. Passmore, *A Hundred Years of Philosophy*, p. 207.

²M. R. Cohen and E. Nagel, *Introduction*, p. 182.

³Cf. J. M. Copi, *Introduction to Logic* (3rd ed.), pp. 245-246.

⁴M. R. Cohen and E. Nagel, *Introduction*, p. 182.

⁵E. J. Carnell, *Christian Commitment*, p. 70 n., says of the law of contradiction: "All other laws of logic are analytically included in it—the laws of being and excluded middle, and the general laws governing the syllogism and the square of opposition." In the text we have followed the quite different judgment of some of the leading logicians.

⁶E. J. Carnell, *An Introduction to Christian Apologetics*, pp. 59, 60. In *Christian Commitment*, p. 246, he says, "A logical contradiction is never valid; there are no limits to reason as a test for truth."

⁷F. Schaeffer, *The God Who Is There*, pp. 14, 15.

⁸N. Geisler, *Philosophy of Religion*, p. 100. By "rationally inescapable" he means "logically inescapable."

This absolute and unconditional commitment to the law of contradiction is quite surprising in view of the evidence that there are limitations to its applicability.

1. There is the problem posed by irrational numbers. According to E. Cell, "Russell and Whitehead . . . [have] shown that irrational numbers ($\sqrt{n-1}$) were derived from rational numbers (-1), which in turn were similarly built out of real numbers (1), and these were still further constructions out of simple 'logical' statements."⁹ If Cell is correct, irrational numbers pose an insurmountable problem for those who believe that the logically necessary is always real.

2. There is the problem posed by Zeno's proof that Achilles can never catch the tortoise: "Achilles must first reach the place from which the tortoise started. By that time the tortoise will have got on a little way. Achilles must then traverse that, and still the tortoise will be ahead. He is always coming nearer but he never makes up to it."¹⁰ But of course we all know that in actual fact Achilles easily makes up to the tortoise. Logic has led us astray! Of even greater importance is Zeno's proof that "motion is impossible" and that "an arrow in flight is really at rest."¹¹

It is instructive to examine E. J. Carnell's criticism of Parmenides and Gorgias, other members of the Eleatic school of philosophers to which Zeno belonged.¹² He charges them with a "bad use of logic." But why it is "bad" is not made clear. He may be casting doubt on their application of the laws of logic when he says, "Change breaks the law of excluded middle (they thought)." But if so, no reason is given for the doubt. Moreover, he never specifies a false premise. He attacks their hope and belief but does not show that their conclusions result therefrom. He also makes assertions contrary to their conclusions, but assertions are not reasons.

3. There is the problem that according to logic the whole is equal to the sum of the parts, whereas it is well known that the whole is usually, of not always, more than the sum of the parts. S. Harris faulted logic at this point: "The judgment of excluded middle . . . in which formal thought is completed, recognizes the sum total of thought merely as a total of number. But a complex whole of reality is much more than a total of arithmetic, because the parts are individual realities

⁹E. Cell, *Language, Existence and God*, p. 57. B. Russell, *Mysticism and Logic*, p. 54, states that the principles employed in deductive reasoning are "the sole source of everything in pure mathematics."

¹⁰Quoted in E. J. Carnell, *Introduction*, pp. 37-38.

¹¹B. Russell, *Mysticism*, p. 63. "After being refuted by Aristotle, and by every subsequent philosopher from that day to our own, [Zeno's] arguments were reinstated. . . . Weierstrass . . . has at last shown that we live in an unchanging world, and that the arrow in its flight is truly at rest" (pp. 63-64). Mathematicians are now able, on the other hand, to show that Achilles can overtake the tortoise (pp. 69-70). But they do so by introducing the concept of infinity, a concept unavailable to orthodox Christians who believe that space and time are finite. Russell indicates that unless one assumes infinity one is shut up to "the axiom that the whole has more terms than the part." He adds, "There is no good word to be said for the philosophers of the past two thousand years and more, who have all allowed the axiom and denied the conclusion" that Achilles cannot catch the tortoise. It may be noted that Russell apparently rejects this axiom. In our view he ought rather to have rejected the axiom that logic is universally applicable.

¹²E. J. Carnell, *Introduction* (2nd ed.), pp. 37-39.

differing from each other, and the relations which unite them are real and diverse. Of this no notice is taken in the formal thought which forms its totals by counting and rests on the maxim that the whole is equal to the sum of all its parts. This is a maxim of arithmetic which deals only with number."¹³

4. If one takes ethics seriously it is necessary to be illogical, as the following considerations make clear: (a) There can be no virtue where there is no choice. An action that is determined cannot be a virtuous action. (b) A choice that is arbitrary (e. g., a choice that may be compared to the toss of a coin) is not a virtuous choice.¹⁴ To be virtuous a choice must be due to good motivation. (c) But if a choice is motivated, it is not free; it is determined by the motive. For an action to be virtuous it must therefore be both determined and free, which is a contradiction. If one believes in the possibility of virtue, he cannot believe in the universal validity of the law of contradiction.

Certain philosophers¹⁵ and numerous theologians¹⁶ have thought that they have escaped this dilemma by viewing freedom as freedom from external constraint, and therefore freedom for self-fulfillment.¹⁷ As a result they believe they can describe those with no choice as both free and virtuous, and can do so without violating logic. But it is not any kind of freedom that makes virtue possible; it is only freedom to choose between options that makes it possible. There is no way to escape the contradiction inherent in the concept of virtue.¹⁸

¹³S. Harris, *The Philosophical Basis of Theism*, p. 59.

¹⁴We leave aside the question whether such a choice is possible.

¹⁵See *Webster's Collegiate Dictionary* (5th ed.), p. 399.

¹⁶E.g., A. M. Fairbairn, *The Place of Christ in Modern Theology*, p. 413. Cf. E. J. Carnell, *Christian Commitment*, pp. 66 ff.

¹⁷Cf. G. T. W. Patrick, *Introduction to Philosophy*, pp. 342-343.

¹⁸The attempt has been made by Austin Farrer in his 1957 Gifford Lectures to refute the view "that we cannot act except as we are motivated to act" (*The Freedom of the Will*, pp. 216-234). But careful examination of his argument uncovers a fallacy at every critical point:

1. On p. 220 he gets rid of "a motive always operative" merely because it is "not usually called a motive."

2. On pp. 226-227 he assumes that when one becomes aware of his interest in a particular situation, that awareness "enters into the succession of events [and] does not leave them unaffected. He is not the spectator of his conduct, he is the agent in it." As a result he "may act as he determines, not as he is determined by any shove from behind." But this is not so. Becoming conscious of one's interest or desire on a given occasion is not due to choice. Moreover, the new motives that come into play because of that consciousness do not come into play because of choice or decision. And the decisions that are made are due to these various motives and the particular influence they have on the person concerned. Moreover, one cannot choose among the motives influencing him, or compromise between them, without being motivated thereto.

3. On p. 232 he states that "out of antecedent interest is born an interest concomitant with the action it motivates: an interest inseparable from the action itself, and equally flexible." "Concomitant" does not mean that the interest is not prior to the action; indeed, he says it "motivates" the action. To describe the "concomitant" interest as flexible is not only totally gratuitous in this context; it is of no significance if it nevertheless "motivates" the action. (It is "born" of an "antecedent interest," so flexibility can hardly mean that the interest can be qualitatively of more than one kind.)

4. On p. 233 he speaks of "a man motivated by interest in what he makes up as he goes along." But if this is to be an argument for freedom of choice, the author must show that what is "made up" is "made up" without any motive for the "making up." And even if he could succeed in demonstrating this—

5. One who understands the aesthetic sense understands that the aesthetic often, if not always, involves what is contradictory. The harmonic discord that "makes" a composition in music is the introduction of a note contrary to the "logic" of the music. In painting and sculpture it is (often?) the discordant element that "makes" the piece great. It is the feature that interrupts the symmetry of a landscape that makes the scene especially beautiful.¹⁹

It is especially surprising that orthodox Christians should hold to the universal applicability of logic. Various doctrines of the faith provide problems for such a view.

To take what is probably the clearest example first: Given the Christian view of God, the fall of Satan is a logical impossibility. As was said long ago, Satan "conceived the impossible thought." There are those who have suggested that God may be able to explain Satan's fall. But if he can do so logically, evil must in some sense derive from good, a view that may perhaps accord with Hindu or Hegelian thought but not with Biblical thought, because it means that ultimately evil is only a form of good. The person who holds that evil is either imperfect good or lack of the good, and the Manichaean who holds that evil is an ultimate principle, are each quite logical. But the orthodox Christian, who traces it to the revolt of an intelligent being who had nothing in himself or in his environment encouraging him to rebel, holds to that which is logically untenable.

If the law of contradiction always holds, the Biblical view of the cross is impossible.²⁰ If the Father loves the Son, he could not have sent him to endure the shame and suffering of Calvary. If it be suggested that thereby he gained greater glory for the Son, the reply is simply that then the Son could not receive his greatest glory without human sin. This makes sin necessary to God and, therefore, ultimately good.²¹ The liberal who believes that Jesus was a man whose death was a

which he cannot—the man is still not free: He is a slave of chance.

Farrer's attempt to show that choice is not determined fails. Indeed the failure surfaces in the statement, "If anyone asks how choice can coexist with interest and not be determined by it, we will answer: 'The chooser is interested in choosing'" (p. 232). No matter how one interprets this statement, its failure to show what it is intended to show is patent.

¹⁹Of course, not all that is discordant enhances beauty. The discordant often destroys beauty.

²⁰We would argue that the illogicality of the Father sending his Son to die on the cross is quite different from the illogicality of Satan's rebellion. The Father's sending of the Son is compatible with the "Christian" epistemology outlined later in this paper; Satan's rebellion is not.

²¹Though he holds that God is not the author of evil, N. Geisler (*Philosophy*, p. 373) states, "Only a moral world where evil actually occurs is one where the greatest moral good is achievable." But if so, God needs evil, and he can hardly condemn what he needs. D. E. Trueblood likewise argues that "evil is necessary," that it is "due to the nature of goodness" (*Philosophy of Religion*, pp. 246-253). He quotes with approval the statement of William Temple: "Sin falls within His [God's] purpose, and is even part of it." Actually, his argumentation is surprisingly weak. In illustrating "intrinsic impossibilities," and therefore things that God cannot do, such as "mak[ing] triangles in which the sum of the interior angles is not 180 degrees," "water which will quench thirst and yet not drown people," he includes the statement, "Even God cannot create an interdependent community of persons without also producing a situation in which evils spread." (He almost immediately contradicts one element of this statement with the comment, "This is not to say that createdness necessitates evil.") The only support he ever provides for the idea is in the statement, "If the possibility [of moral evil] is genuine, it will sometimes be realized"—an assertion he immediately contradicts by saying, "It is not necessary that we sin" (emphasis his). But if it is not necessary that we sin, it cannot be said that the possibility of sin means that it will sometimes be

mighty moral influence makes more logical sense.

The orthodox doctrine of the incarnation also provides a problem for those who insist that logic is universally applicable. How can there be two natures but only one person, especially if it be remembered that the debate over monothelism led to the conclusion that the two-natures doctrine implies that Jesus Christ had two wills? That one person can have two wills would seem to be contrary to the law of contradiction. Of course there are "conservatives" who declare that in Christ "there are not two wills, one Divine and one human." One suspects that the law of contradiction has inspired such a judgment, though one wonders whether they are not violating that same law when they continue to affirm that "each nature is complete in itself."²² Be that as it may, by what logic is it possible for a nature that cannot be tempted to be united with a nature that can be tempted, or for a nature that cannot grow weary to be united with one that can grow weary, or for a nature that is always in full and perfect favor with God to be united with a nature that can grow in favor with God? The Monophysites and the Nestorians had more respect for logic than the orthodox, as did the Docetists and the Ebionites before them, and as do those liberals who deny the incarnation today. It is not without some justification that Paul Tillich speaks of the "inescapable contradictions and absurdities into which all attempts to solve the Christological problem in terms of the two-nature theory were driven."²³

The doctrine of the Trinity also provides a problem for those who hold to the universal applicability of the law of contradiction, even though some seem to suggest otherwise. For example, E. J. Carnell states, "The perfect pattern for the solution to the relation between unity and diversity is found in what Van Til calls 'the eternal one and many.' By this is meant that 'Unity in God is no more fundamental than unity. The persons of the Trinity are mutually exhaustive of one another.' " The last statement he goes on to clarify (or correct?) by saying, "The essence of Deity—the One—is equally exhausted in the persons—the Many."²⁴ It is to be noted that what is said is not a solution in the sense that we are concerned with. It does not tell us how the essence of Deity can be "equally exhausted in the persons" without the "persons" being merely alternative and interchangeable names, representing no real distinction whatever, as in modalistic monarchianism.

Numerous attempts have been made to show, as J. O. Buswell, Jr., has expressed it, that in the doctrine of the Trinity "we are not expressing a contradic-

realized. Nevertheless, the view that the possibility of sin means that it will sometimes occur enables him to assume the necessity of sin as an actuality when he has shown the necessity of sin as a possibility. We append only one further comment: Trueblood asserts that in Genesis 3—a "legendary story," he says—Adam and Eve "are really both advancing and 'falling' in that they made, at the same time, a step which enables us to rise to great heights and to sink far lower than any beast." But there is no suggestion in the story that they were "advancing," nor that "they made . . . a step which enables us to rise to great heights." And there is no other reason to suggest this but the rationalistic conviction that evil is necessary, a view that makes evil ultimately good.

²²S. J. Gamertsfelder, *Systematic Theology*, p. 269.

²³P. Tillich, *Systematic Theology*, 2. 146.

²⁴E. J. Carnell, *Introduction*, p. 41 n. 22.

tion, or 'an absurdity in arithmetic.' " ²⁵ But all of them fail. Buswell himself adduces empirical examples of the combination of unity and diversity somewhat similar to what we have in the Trinity. Of course he is aware that even in the combining of illustrations—a questionable procedure, I suspect—"we still do not have an explanation. The Trinity is still a mystery." But he thinks these illustrations assist in the perception that the doctrine of the Trinity is not illogical. Concerning one of his illustrations he says, "We must make it perfectly clear that corporate personality does not explain the Trinity. It only helps us to see that the mysterious doctrine of the Triune God is not a contradiction." But whatever value the illustration may have, it does not do what Buswell says it does, because it is not shown that the facts adduced about corporate personality do not violate the law of contradiction. Even if a perfect illustration of the Trinity could be found in empirical experience it would do nothing whatever to show that there is no contradiction in the Trinity unless it were also shown that the combination of unity and diversity in the illustration is such that logical contradiction is not involved. "Philosophers long ago observed the remarkable fact that mere familiarity with things is able to produce a feeling of their rationality." ²⁶ Buswell has fallen into this trap. It will be noted that we have already provided reason to believe that what is empirical may not always accord with what is logical.

To take another example, W. T. Shedd also insists that there is "no contradiction" in the doctrine of the Trinity.²⁷ He believes he can say this because "God is one in another sense than he is three, and three in another sense than he is one." ²⁸ He is one in essence, but there are "three modes of the essence." ²⁹ What he fails to see is that for this to be true without involving contradiction requires a dualism of mode and essence, à la Plato, which is intolerable for orthodoxy.³⁰ Orthodoxy requires that the unity thereof be maintained. One cannot maintain such a unity and still affirm the three modes of the one essence without contradiction.³¹

All attempts to show that the orthodox doctrine of the Trinity does not involve contradiction fail. The plain fact of the matter is that Sabellians and Arians, for example, are more logical than orthodox Christians. As already intimated, it is quite illogical to say that one and the same "substance" is Father, Son and Holy Spirit, if Father, Son and Holy Spirit are not merely different names.

²⁵J. O. Buswell, *A Systematic Theology of the Christian Religion*, 1. 124.

²⁶W. James, *The Will to Believe*, p. 76.

²⁷W. T. Shedd, *Dogmatic Theology*, 1. 268.

²⁸Ibid.

²⁹Ibid., 1. 280.

³⁰On pp. 280-281 he even uses the language of "form" and "substance."

³¹I fail to see how he can say "eternal generation and spiration . . . modify" the essence and yet imply that the essence remains "identically the same" (ibid., 1. 276) without involving himself in contradiction. I also fail to see how he can say that the "three hypostatical consciousnesses constitute the one self-consciousness of the Divine essence" (ibid., 1. 282) without involving himself in contradiction.

In connection with the doctrine of the Trinity, it is of interest to note that a variety of "conservative" scholars deny the generation of the Son and the procession of the Spirit, teachings that are part of Chalcedonian orthodoxy.³² Whatever the motivation of such scholars, adherence to the view that logic is universally applicable would certainly facilitate disagreement with Chalcedon on these points. There is just no logical way by which we can say that "the divine essence is communicated in its entirety" by the Father to the Son³³ without the Father diminishing himself in any way. Likewise with respect to the procession of the Spirit. The Chalcedonian doctrine implies the possibility, at least so far as Deity is concerned, of having one's cake and eating it too.

We have by no means exhausted the problems of the orthodox who try to hold to the absolute infallibility of logic, but it ought to be quite clear that the doctrines of historic Christianity are not always compatible with the law of contradiction. Of course, many have convinced themselves that they have succeeded in explaining the logical compatibility of the doctrines we have discussed. But careful scrutiny always reveals that fallacious reasoning is involved.³⁴

We pause to note that what we have called contradictions in Christian doctrine are often referred to as paradoxes. We understand "paradox," when used in such a context, to mean "apparent contradiction"—that is, contradiction in appearance but not in reality. If we only had the knowledge that God has we would perceive that no logical contradiction is involved. But if so, how is it known that in the light of God's knowledge there is no logical contradiction? Only on the assumption that the law of contradiction is universally applicable, an assumption that we have seen reason to question quite apart from theological considerations—though as we have seen it is also incompatible with orthodox Christian doctrine. Moreover, many of those who insist on paradox in these matters of Christian doctrine insist that the Calvinist and Arminian doctrines of election cannot both be right, because to affirm that they are is illogical. In view of the fact that both appear to be derived from Christian premises, they ought to proclaim a paradox. That they ordinarily do not do so calls into question their appeal to "paradox" in the areas we have been discussing.

It is to be emphasized that we have not stated that logic is valueless, only that it is not always applicable. Logical argumentation is frequent in the Bible. Logic was one of the things that made it possible to put men on the moon. We have used logic in this paper.

N. Geisler, in arguing that "the rationally inescapable is the real,"³⁵ ulti-

³²E.g., B. B. Warfield, *Biblical and Theological Studies*, pp. 51 ff.; J. O. Buswell, *Systematic*, 1. 106 ff., 119 f.

³³W. T. Shedd, *Dogmatic*, 1. 277.

³⁴According to J. O. Buswell, *A Christian View of Being and Knowing*, p. 192, "There are . . . few Bible-believing theologians who take the position [advanced by Kierkegaard and Barth] that we must believe 'a paradox' in the sense of a formal contradiction." We have two comments: (1) The "contradictions" we suggest are for an entirely different reason than those of Kierkegaard and Barth, whose contradictions are due to their conception of God as the absolutely Other; and (2) if what Buswell says is correct, most Bible-believing theologians have not thought through the implications of their views.

³⁵N. Geisler, *Philosophy*, pp. 98 ff.

mately rests his case on the point that "the principle of noncontradiction (what others call the law of contradiction) is at least linguistically or humanly necessary for meaningful statements and arguments." "Self-stultification" is the result of failure to "employ the law of noncontradiction." Geisler is correct, but what he fails to notice is that the universal application thereof sometimes involves one in a kind of self-stultification. It involves one in believing that irrational numbers are really rational numbers, that Achilles can never catch the tortoise, and so on, to say nothing of various theological doctrines to which Geisler gives allegiance. It is only by employment of the law of contradiction that we escape self-stultification, yet the employment thereof may sometimes be the very cause of self-stultification.

In our view the Chalcedonian doctrine of the Trinity (with the *filioque* clause added) provides a model for our understanding of the nature of truth, and so for epistemology (as indeed it must if the doctrine is sound and there is unity in truth). Moreover, we could argue that a study of Scripture shows conformity to this model in the matter concerning us.³⁶ Taking the Trinity as our model it would appear that we may say the following:

1. Rational propositions, empirical observation and aesthetic appreciation are all involved in coming to correct understanding. Rational propositions are the counterpart of the Father because the "idea" of all things—creation, redemption, judgment—originates with him. Moreover, since the Son is begotten and the Spirit spirated, there is an important sense in which it is only the Father who may be described as "absolute" or "universal," and logic is impossible without a universal. Empirical observation is the counterpart of the Son because he is begotten, to say nothing of the fact that he became incarnate. Aesthetic appreciation is the counterpart of the Spirit because he is spirated, to say nothing of the fact that he is the one who ministers love, joy, peace, and so forth.

With regard to empirical observation, it is to be noted that the doctrine that the Son is eternally generated suggests that this will include the observation of flux (cf. Heraclitus).³⁷ In this connection it is also to be noted that the generation of one Son, and not of an infinite number (or of a great number?) of sons, suggests that the empirically unique and unusual is of particular epistemological significance. That there is a sense in which it is only the Father who is absolute points in the same direction. (Note how this accords with the epistemological significance of miracles in the Bible.) On the other hand the empirically grotesque, however unique it may be, is not of positive epistemological significance because it does not participate in truth but in error, as aesthetic appreciation indicates, to say nothing of the doctrine that the essence of deity is fully communicated to the Son. And not only does it participate in error, but it witnesses that error is more than the absence of truth and that it is parasitic in its relation to truth. That which is grotesque is only of epistemological significance in a negative sense.

2. The order in which each of the components is involved is important in light

³⁶See the Johannine teaching concerning truth (John 3:21; 14:6-9; 17:8); Exodus 4; 1 Kings 18; Luke 24; John 20; Acts 17; and so on.

³⁷According to G. Malantschuk, *Kierkegaard's Thought*, p. 7, "Kierkegaard claims that modern philosophy neglects exploration of this issue" (that is, motion). He quotes Kierkegaard as follows: "The newer philosophy has never accounted for motion."

of the doctrine that the Father begets the Son and that the Father and Son spirate the Spirit. One must not begin with empirical considerations as the empiricists do, and one must not begin with aesthetic appreciation as Schleiermacher does. One must not allow aesthetic appreciation to precede empirical considerations as John Calvin does.³⁸

3. Unless and until all of the three components of understanding have played their full and proper part, one's grasp of truth will be distorted in one way or another. The unity of the Godhead implies this.

In connection with this matter of the unity of truth, it is to be noted that H. B. Swete's summary of the view of the Holy Spirit in the ancient Church includes the statement: "In derivation He is third, but in His functional relations to the Trinity He is intermediate between the Father and the Son. He is the Bond of the Trinity, the harmony which unites Father and Son; the fellowship, the common life, almost the very Godhead of the Two, the holiness and mutual love of both. The Father loves the Son, the Son returns the Father's love; the love of both is a Third Person who makes them one. It is his function to unify and to preserve the Unity unbroken."³⁹ The significance of this doctrine for our understanding of the nature of truth and for epistemology is obvious. It means that the unity between the rational and the empirical is by way of aesthetic appreciation, not because the extended universe is logical. (As we have seen it is not—at least not always.)⁴⁰

³⁸J. Calvin, *Institutes of the Christian Religion*, I.vii, viii; see especially I.viii.1, 13.

³⁹H. B. Swete, *The Holy Spirit in the Ancient Church*, p. 372. On p. 226 he quotes Epiphanius to the effect that the Holy Spirit is "the bond of the Trinity . . . , the Spirit of the Father and the Spirit of the Son, intermediate between the Father and the Son, and from the Father and the Son." On p. 326 he quotes Augustine: "In the Father is unity, in the Son equality. Because of the Father all are one; because of the Son all are equal; because of the Holy Spirit all are linked together." On p. 282 he quotes John of Damascus: "The Holy Spirit proceeds from the Father through the Son. . . . [He is] God, intermediate between the Ingenerate and the Begotten, and connected with the Father through the Son."

⁴⁰It is worth noting that T. Boman, *Hebrew Thought Compared with Greek*, p. 194, says, "An epistemology which represented a synthesis of the two tendencies, let us say of the philosophies of Kant and Bergson, among several, would be just what is wanted." We believe that we have provided the basic outline of an epistemology that fulfills the desire of Boman and more. It is notable that on p. 208 Boman says, "Hebrew and Greek thinking are complementary; the Greeks describe reality as *being*, the Hebrews as *movement*. Reality is, however, both at the same time; this is logically impossible, and yet it is correct." We doubt that Boman does full justice to Hebrew thinking, but his insistence that a correct understanding of reality is one that involves what is "logically impossible" accords with the view argued in this paper.

E. J. Carnell, *Christian Commitment*, has "three kinds of truth: ontological truth, truth as propositional correspondence to reality, and truth as personal rectitude . . . [and] three methods of knowing: knowledge by acquaintance, knowledge by inference, and knowledge by moral self-acceptance" (p. 29). His view has the merit of perceiving that truth is threefold.

Some of the criticisms to be made of his view are as follows: He makes the false assumption that the empirical is rational (pp. 75-79). This assumption enables him to make propositional truth secondary to "ontological" truth, thereby, in effect, reversing the order of the first two persons of the Godhead. By making personal rectitude the third kind of truth—"essence and existence are united by right moral decision" (p. 16)—he makes duty the foundation of Christian conduct. It is true that he defines moral rectitude in terms of love and declares that love is not "a legal sense of duty." But his definition of love is reminiscent of the definition of (certain of) the neo-orthodox thinkers in that it is pure regard for others and is without any element of self-regard (see pp. 207-211). It is not surprising, therefore, (1) that he emphasizes peace but says nothing about joy in the beloved, (2) that he repeatedly emphasizes "the law of

As we intimated earlier, the aesthetic sense often unites what is contradictory. The harmonic discord in music, also mentioned earlier, is but one of many examples. It is of interest to note that the "logic" of the music is more fundamental to the music, but the beauty derives from the intrusion of the discord into the "logic" of the music. However, it is also this beauty that unites the "logic" and the discord. The parallel with the doctrine of the Holy Spirit and with the epistemology we have set forth is extensive.⁴¹

How reliable, then, is logic? It would appear that it is thoroughly reliable when dealing with the nominal (being) but not when dealing with the verbal (becoming) or the aesthetic. Our reliance on logic in this paper is justified by the fact that we only use it of the existential and the aesthetic when we are considering them in the abstract.

A second look at the basic laws of logic—the law of identity, the law of contradiction and the law of excluded middle—itself raises the question whether they may not be restricted in application to "being," to what "is." Notice the formulation of them set out at the beginning of this paper: "If anything is A it is A; nothing can be both A and not A; anything must be either A or not A" (emphasis mine). It would appear from this that becoming can only be logically "handled" in the abstract.

The route by which we have arrived at our judgment concerning logic may be new. In fact, so far as we know it is new. But the limitations on logic at which we have arrived are not at all new. We give a few examples of others who hold similarly without committing ourselves to all that their statements include or imply:

1. According to G. Malantschuk, Kierkegaard held that "logic . . . [is] concerned with pure thought-objects."⁴²

2. According to G. Santayana, logic "studies essence, not truth."⁴³

3. According to A. N. Whitehead, "Aristotelian logic . . . deals with propositional forms only adapted for the expression of high abstractions, the sort of abstractions usual in current conversation where the presupposed background is ignored."⁴⁴

4. According to William James, "theoretic rationality" is "a most miserable and inadequate substitute for the fulness of the truth. It is a monstrous abridg-

love" and speaks of it unambiguously as "the greatest of the laws" (p. 222), and (3) that he can represent rectitude as exhaustive of the meaning of love, as is evident in his statement that rectitude is the third kind of truth.

Two other comments may be made: (1) If the realm of the phenomenal is rational (pp. 75-79), why does he think that essence and existence need to be united by right moral decision? Are they not already united? (2) He seems to be quite unaware that one's conception of truth needs to parallel one's conception of God if gnosticism is to be avoided.

⁴¹Of course there may be discord in music that does not enhance. Such discord must be eliminated. It is comparable to sin.

⁴²G. Malantschuk, *Thought*, p. 139. On p. 142 he represents Kierkegaard as holding that "logical thinking . . . prohibits a superficial erasure of the difference and transitions between spheres." Though we doubt that this is the only function of logic, it is a most important one.

⁴³G. Santayana, *Skepticism and Animal Faith*, p. 312.

⁴⁴A. N. Whitehead, *Adventures of Ideas*, p. 196.

ment of life, which, like all abridgments, is got by the absolute loss and casting out of real matter. . . . The particular determinations which she ignores are the real matter exciting needs, quite as potent and authoritative as hers.”⁴⁵

5. According to William Temple, “This realm of reality [that is, the one opened up to us by formal logic] is changeless not only in the sense in which a law of Nature is an unchanging principle governing a process of change, but in the sense of having no reference to change or process at all.”⁴⁶ Again he says, “The Greeks sharply distinguished the realm of Being from the realm of Becoming. . . . Logic (was) concerned with the former.”⁴⁷

6. According to T. Boman, “Platonic-Aristotelian logic . . . has for its presupposition ‘that which is’ or the ‘objective and unalterable.’”⁴⁸

But perception of the problem posed by logic is not particularly modern. Plato perceived it, and his doctrine of “a realm that lies between Being and Not-Being—the realm of phenomena—is an explicit recognition of it.”⁴⁹ For him the “great value” of mathematics is “that it effected a transition away from the physical world.”⁵⁰ Of course such a view is in sharp contrast to the view that “the real world [that is, the empirical universe] is logical and mathematical,”⁵¹ a view not uncommon in modern times.⁵² But as the evidence we have adduced indicates, Plato was more perceptive than the rational empiricists, even though he drew the wrong conclusion from what he perceived. Instead of concluding that logic is of limited applicability he concluded that the phenomenal realm is a realm “between Being and Not-Being.”⁵³

When once the limitations of logic are understood, one is no longer surprised by such things as Zeno’s proof that Achilles cannot catch the tortoise or by the fact that the whole is (often?) greater than the sum of the parts. After all, “becoming” is involved in Achilles’ pursuit of the tortoise and in any existential division of a whole into parts.⁵⁴ Nor is one discomfited by the contradictions inherent

⁴⁵W. James, *The Will to Believe*, pp. 69, 70.

⁴⁶W. Temple, *Nature, Man and God*, p. 88; cf. pp. 87, 91.

⁴⁷*Ibid.*, p. 101.

⁴⁸T. Boman, *Hebrew Thought*, pp. 194-195.

⁴⁹W. Temple, *Nature*, p. 98.

⁵⁰*Ibid.*, p. 102. But see G. Matthews, *Plato’s Epistemology*, p. 34.

⁵¹G. T. W. Patrick, *Introduction*, p. 354. Cf. E. J. Carnell, *Introduction*, p. 61: “The present world is a consistent world.”

⁵²Cf. W. Temple, *Nature*, p. 102: “For the Cartesians Mathematics is a study of the extended world.”

⁵³According to G. Matthews, *Epistemology*, pp. 16-17, Plato held that “knowledge must be of what is timeless and changeless. . . . Knowledge is of what is, and of what is true.” For the influence of Parmenides on Plato, see B. Russell, *Mysticism*, p. 13. It is noteworthy that in his *Parmenides* Plato represents Parmenides and Zeno as teaching young Socrates.

⁵⁴The matter of identifying “becoming” in relation to irrational numbers is perhaps possible as follows: The building of rational numbers out of real numbers involves “moving” from the abstract to the unreal. It may be argued that one ought not to say that $1-2=-1$, because -1 is not even an abstraction; something

in such doctrines as those of Satan's fall, the cross, the incarnation, the Trinity. Becoming, or at least what is analogous thereto, is in evidence in all of them. The Chalcedonian doctrine of the Trinity is no exception; it teaches that the Son is begotten and the Spirit spirated. And those "conservatives" who hold doctrines of the Trinity that do not include generation and spiration do include the view that there is interaction between the members of the Trinity, and therefore include something analogous to motion if not to becoming.⁵⁵

But not only does an understanding of the limitations of logic release us from the problems that are otherwise posed by such doctrines as these; it also has other far-reaching implications in the field of theology and in related fields. We name only a few:

1. It may well be that both the Calvinist and Arminian doctrines of election represent half-truths. It appears that both are developed from Biblical premises by the application of strict logical principles. The problem may be that both sides fail to realize that the law of contradiction has limited application. Indeed, I suspect that all the doctrines on which Calvinists and Arminians disagree need re-examination to see whether the same error is not at the root of the disagreement.

2. It may well be that the whole area of ethics needs re-examination. An unqualified reliance on logic has commonly characterized the ethical doctrine of conservatives. As a result conservative ethics, like liberal ethics, has ordinarily been absolutist.

3. Much of the work in the area of apologetics has been misguided. By the assumption that the law of contradiction is of unlimited applicability encouragement has been given to liberalism, even though the intention has often been to promote orthodox Christianity.

In Greek thought the view prevailed that the law of contradiction is of unlimited applicability.⁵⁶ Christians have customarily followed Greek thought at this point. In so doing they have accepted into their bosom the seeds of their own destruction. If instead they are guided by the Chalcedonian doctrine of the Trinity, they will be intellectually more sound and will eliminate a serious threat within at the same time. Some important adjustments in doctrine, ethics, apologetics, and so forth, will be necessary, but the gain will be enormous. Not the least in the matter of gain will be the ease with which various Biblical passages that have occasioned long debate and strong disagreement will now be assimilated.⁵⁷

cannot be less than nothing. The fact that rational numbers are of practical significance may perhaps be compared with the appearance of the grotesque, which may be of considerable practical importance. (Consider the practical importance of a two-headed calf, or of garbage by the roadside.) It should be noted, moreover, that rational numbers, like occurrences of the grotesque, are parasitic in that they could not have been invented had there not been that in our empirical experience of which real numbers are an abstraction. May we go a step farther and suggest that irrational numbers may be compared to Satan and hell in which parasitic negativity is unalloyed with any positive practical value? In them the "movement" away from the "real" and the "true" has become complete—yet paradoxically they do "exist," just as irrational numbers exist in mathematics.

⁵⁵We have argued elsewhere that the view that the Son was not eternally generated and the Spirit was not spirated must be rejected on both Biblical and theological grounds.

⁵⁶See Plato, *Republic*, 436b; Aristotle, *Metaphysics*, 4. 1005. According to E. A. Burt, *Types of Religious Philosophy* (rev. ed.), p. 62, Aristotle's "deity is pure reason."

⁵⁷E.g., Rom 9:11-13; 1 Tim 2:3-4; 1 John 2:2.