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Title: Biblical Paradox and “I AM” Sayings in John.

(1) A New Interpretive Framework for “I AM” sayings in John

(2) Paradox of Circularity in Matthew 22:15-46

(3) New Critical Method toward the Validity and Interpretation of Paradox of Circularity.

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Abstract.

In the early twentieth century, Russell pioneered the formal study of paradox in logic. Understanding the cause of the paradoxes, the proposed remedy was to avoid any circular logic or to treat any circular logic as invalid. Following this scholarly trend, the study of biblical paradox has been one of the most controversial and confusing areas in contemporary biblical scholarship for the latter half of the twentieth century. However, a renewed interest has ensued due to the innovative approach pioneered by Kripke in the study of paradox and circularity. This paper presents and explores this new paradigm to facilitate an understanding of the paradoxes of circularity and various circular constructs in the Bible. The selected examples in this paper include three paradoxes in Matthew 22:15–46, the Liar paradox in Titus 1:12, the divine “I am” sayings in Exodus 3:14, the circular indwelling relationships in John 14:10–11, and two proof methods in John 8:12–20. One proof method in John 8:12–20 is distinctively self-referential to the validation of a personal claim to be the light of the world. The approach of this paper is computational, providing a key to understanding the paradoxes of circularity in the Bible.

Keywords: paradox; circularity; I am; John; New Testament

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BIBLICAL PARADOX AND “I AM” SAYINGS IN JOHN

1. Introduction

In the early twentieth century, Russell pioneered the formal study of paradox in logic.¹ He discovered that any type of vicious circle had the potential to cause a paradox to occur. His solution to avoiding the occurrence of a paradox was simply to eliminate any vicious circle or to render it invalid.² The goal was to keep the emerging system of Formal Logic sound and valid by eliminating or denying the very presence of these potentially damaging paradoxes. Thereafter, the scholarly consensus and trend were established to follow Russell’s solution, and many scholarly disciplines still adhere to it even today. Biblical scholarship is no exception, which has caused a devastating impact and set up confusion by ignoring any literary circular constructs frequently found in the Bible, thereby rendering them invalid. As a result, the study of biblical paradoxes and circular-constructs has been one of the most ignored, confused, and controversial areas for the latter half of the twentieth century.³ However, a renewed interest has occurred due to the pioneering innovative approach by Kripke in the study of paradox.⁴ This is the primary critical method applied in this paper to analyze various paradoxes of circularity in the Bible.

A brief survey of the selected examples is presented with the analysis of their literary circular-constructs. The selected examples in this paper include three paradoxes in Matthew 22:15–46, the Liar paradox in Titus 1:12, the divine “I am” sayings in Exodus 3:14, the circular indwelling relationships in John 14:10–11, and two proof-methods in John 8:12–20. One distinctive proof-method for “I am the light of the world” is based on self-reference or circular reasoning, providing a new interpretive basis and framework for Jesus’ “I am” sayings in John. Following its traditional meaning, the working definition of “paradox” (παράδοξος) is defined as a statement or an event which is “contrary to opinion or exceeding expectation,” “unexpected,” “strange,” “wonderful,” or “remarkable.”⁵ This definition is flexible and pragmatic for the purpose and the scope of this paper, conservatively adhering to the meaning in the *Koine* Greek of the Bible. A plural form of paradox (παράδοξα) is found in Luke 5:26, denoting a series of the marvelous and wonderful things revealed by Jesus in word and deed.

The terms of circle, circularity, cycle, infinite loop, and coinduction are used informally and interchangeably to designate any circular relationship. The reader is referred to the literature for an excellent introduction on circularity, nonmonotonicity, and modality in logic, which is used somewhat informally in this paper.⁶ The approach of this paper is distinctively computational.⁷ The author’s hope is to advance the related works

¹Alfred North Whitehead and Bertrand Russell, *Principia Mathematica*, 3 vols. (Cambridge, England: Cambridge University Press, 1910, 1912, 1913), 1:37; A. D. Irvine, “Russell’s Paradox,” in *Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, 2009, <<http://plato.stanford.edu/archives/sum2009/entries/russell-paradox/>>.

²Alfred Tarski, “A Lattice-theoretical Fixpoint Theorem and Its Applications,” *Pacific Journal of Mathematics* 5, no. 2 (1955): 285–309.

³David Basinger, “Biblical Paradox: Does Revelation Challenge Logic?,” *Journal of the Evangelical Theological Society* 30, no. 2 (June 1987): 205–13; Christian Cryder, “Reymond’s Rejection of Paradox,” *Trinity Journal* 22, no. 1 (2001): 99–112.

⁴Saul A. Kripke, “Outline of a Theory of Truth,” *Journal of Philosophy* 72, no. 19 (1975): 690–716.

⁵Frederick W. Danker, *A Greek-English Lexicon of the New Testament and Other Early Christian Literature*, 3rd ed. (Chicago: University of Chicago Press, 2000), 763; James Hope Moulton, *The Vocabulary of the Greek Testament* (London: Hodder and Stoughton, 1930), 483; Gerhard Kittel, *Theological Dictionary of the New Testament* (Grand Rapids: Eerdmans, 1964), 2:255; Narry Fajardo Santos, “The Paradox of Authority and Servanthood in the Gospel of Mark,” *Bibliotheca Sacra* 154 (December 1997): 452–60.

⁶Saul A. Kripke, “Outline of a Theory of Truth,” *Journal of Philosophy* 72, no. 19 (1975): 690–716; Melvin Fitting, “A Kripke-Kleene Semantics for Logic Programs,” *Journal of Logic Programming* 2, no. 4 (December 1985): 295–312; Jon Barwise and Lawrence S. Moss, *Vicious Circles* (Stanford, CA: Center for the Study of Language and Information Lecture Notes, 2004); Gerhard Brewka, Jurgen Dix, and Kurt Konolige, *Nonmonotonic Reasoning: An Overview* (Stanford, CA: Center for the Study of Language and Information Lecture Notes, 1997); Grigoris Antoniou, *Nonmonotonic Reasoning* (Cambridge, MA: MIT Press, 1997); M. Fitting and Richard L. Mendelsohn, *First-Order Modal Logic*, softcover reprint of the original 1st ed. 1998 (New York:

in the Johannine Literature and to bring a renewed interest, understanding, and excitement to the study of biblical paradox and “I am” sayings.⁸

2. Selected Examples of Biblical Paradox

The five biblical passages were selected and presented in this section to illustrate various paradox patterns, and to examine and analyze them for their circular literary-constructs.

2.1. Exodus 3:14

The first example is “I am who I am (אֲנִי אֲשֶׁר אֲנִי)” in Exodus 3:14.

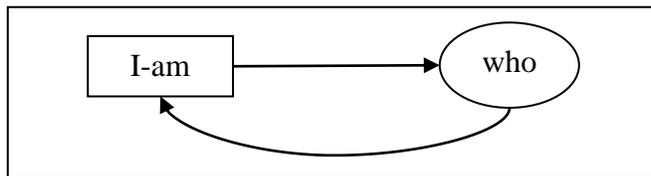


Figure 1. “I am who I am” in Exodus 3:14

In this example, a simple lexical or conceptual diagram clearly reveals its circular construct of “I am who I am.” A cycle is formed to reference oneself (self-referencing). A literary circular construct is used to define a concept (“I am”) with itself by self-referencing or circular reasoning. Though its exact semantic meaning or interpretation is still debatable, one may suggest a theological meaning for “I am who I am,” who is self-living or self-existing (that is, the living God who has no beginning and no end).

The Bible contains many similar patterns of self-referencing. For example, “the good one brings out what is good out of one’s own goodness, whereas the evil one brings out what is evil out of one’s own evilness” (ὁ ἀγαθὸς ἄνθρωπος ἐκ τοῦ ἀγαθοῦ θησαυροῦ ἐκβάλλει ἀγαθά, καὶ ὁ πονηρὸς ἄνθρωπος ἐκ τοῦ πονηροῦ θησαυροῦ ἐκβάλλει πονηρά) in Matthew 12:35. Here each example defines or characterizes a person with the very character or description that it attempts to describe. This type of literary construct is used to define, explain, describe, or even justify one concept by referring to itself in self-reference or circular reasoning. This literary pattern is also described as a “pleonastic relative clause modifying a noun to which its verb is cognate” (John 5:32 and 17:26) or as “tautology” (Zechariah 11:13; Jeremiah 19:2; Exodus 4:13; 1 Samuel 23:13; 2 Samuel 15:20; 2 Kings 8:1).⁹ Another noteworthy example in 1 John 3:9 declares that everyone “born of God” does not sin for God’s seed dwells in him, and he is unable to sin for he is “one born of God” (Πᾶς ὁ γεγεννημένος ἐκ τοῦ θεοῦ ἁμαρτίαν οὐ ποιεῖ, ὅτι σπέρμα αὐτοῦ ἐν αὐτῷ μένει, καὶ οὐ δύναται ἁμαρτάνειν, ὅτι ἐκ τοῦ θεοῦ γεγέννηται). Here the subject-person (1 John 3:9) is expressed as “one born of God (ὁ γεγεννημένος ἐκ τοῦ θεοῦ).” This phrase “one born of God” is used again as the basis for “one born of God” being unable to sin. This is clearly an example of circular reasoning. That is, “one born of God” cannot sin simply by nature of being “one born of God.”

Springer, 1999); Richard Min, “Biblical Paradox and ‘I Am’ Sayings in the Johannine Literature” (Society of Biblical Literature-International Meeting, Amsterdam, The Netherlands, July 2012), <<http://biblicalparadox.files.wordpress.com/2012/11/sbl-im2012min1.pdf>>.

⁷ Richard K. Min and Gopal Gupta, “Biblical Paradox and Coinductive Reasoning” (Society of Biblical Literature-International Meeting, July 2010), <<http://biblicalparadox.files.wordpress.com/2012/11/sbl-im2010min.pdf>>.

⁸ Raymond E. Brown, *The Gospel According to John (I–XII)* (New Haven, CT: Yale University Press, 1995): 533–38; Raymond E. Brown, *The Epistles of John* (New Haven, CT: Yale University Press, 1995): 195–96; Edward Malatesta, *Interiority and Covenant: A Study of Einai En and Menein En in the First Letter of Saint John [Analecta Biblica 69]* (San Francisco: Biblical Institute Press, 1978): 34–36.

⁹ Wilbert Howard, “Semitic Interference in the Syntax of the Gospel of John” (Ph.D. diss., Catholic University of America, 2001), 132–34.

2.2. John 14:10–11

The second example deals with a circular indwelling relationship.

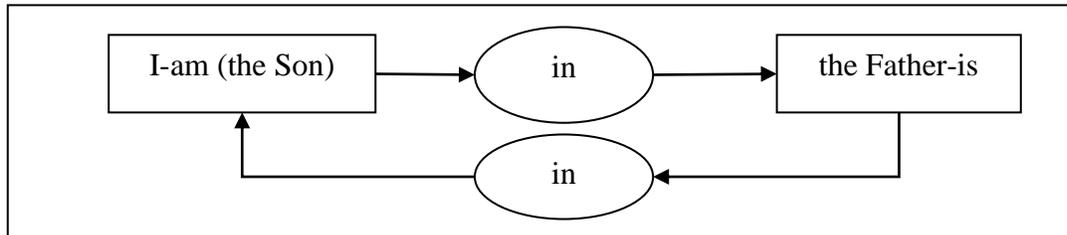


Figure 2. “I am in the Father and the Father is in me” in John 14:10

Here Jesus (the son) says: “I am in the father and the father is in me,” and “the father is in me and I in him” (ἐγὼ ἐν τῷ πατρὶ καὶ ὁ πατὴρ ἐν ἐμοί) in John 14:10–11. In contrast with the first example of “I am who I am” in Exodus 3:14, the construct here is circular, but with two persons mutually referencing each other in a circular or reciprocal indwelling relationship.

A similar example of a circular indwelling relationship is found between the son and his disciples (John 14:20; 17:21–23). Moreover, a close pair-relationship should be noted between the circular indwelling (ἐν ἐμοί ὁ πατὴρ καὶ ἐγὼ ἐν τῷ πατρὶ) in John 10:38 and the oneness (ἐγὼ καὶ ὁ πατὴρ ἐν ἑσμεν) in John 10:30. Because of this close relationship, the Jews accused Jesus of making the claim that he was identical to God (σὺ ἄνθρωπος ὧν ποιεῖς σεαυτὸν θεόν) in John 10:33. However, one should note the equality of the Father and the Son (ἴσον ἑαυτὸν ποιῶν τῷ θεῷ) in John 5:18. Further, Jesus maintains his self-testimony, asserting that (1) he is in the Father and the Father is in him (John 14:10–11), that (2) he and the father are one (John 17:10; 21), that (3) the father is greater than he is (ὁ πατὴρ μείζων μου ἐστίν) in John 14:28, and that (4) it is the pair-relationship of “circular-indwelling” and “being one” (John 17:21–23), to distinguish the son from the father. This pair-relationship is used for the son and his disciples as the disciples are “one” and to be in the father and the son who are “one” (ἓν).

2.3. Titus 1:12

The third example is the well-known Liar paradox in Titus 1:12.

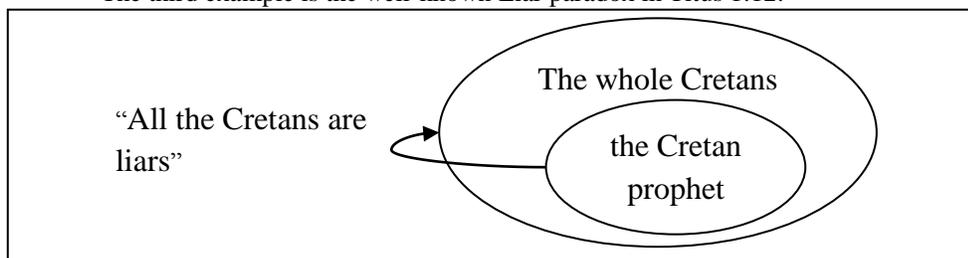


Figure 3. The Liar paradox in Titus 1:12

The text in Titus 1:12 presents a prophet who is a Cretan and thus a member of the larger group of Cretans to whom he is referring in his prophecy of self-negation. That is, the Cretan prophet is referring to himself, creating a circular reference by referring to the Cretan community of which he is a member. The paradoxical question and problem in Titus 1:12 is whether the prophet himself is also a liar as he declares that every Cretan is always a liar.

The difficulty in the Liar paradox is the presence of a self-negation in the circular relationship. In this paradox, even though not explicitly stated, a negative implication is clearly present. Negation in circular reasoning not only presents a challenge, but also complicates the matter with respect to its meaning and validity. Since the Cretan prophet in Titus 1:12 asserts that all Cretans are liars, this Cretan prophet is then also a liar, and thus his own statement (as cited by Paul in Titus 1:12) is a lie. In other words, the Cretan prophet’s prophecy (which is true and is even affirmed by Paul) negates the validity of any truth-statement made by any Cretan (including himself). If

granted and extended, this line of reasoning further shakes the credibility of Paul’s assertion in Titus 1:13. However, one should also note that a liar need not tell lies all the time. That is, a liar may tell a lie with respect to all the statements in a unit of his or her discourse, mixed with some true statements, possibly to gain some credibility. Furthermore, a chosen prophet, whether he is a liar or not, may speak a true prophecy given by God as is the case clearly stated for the case of Caiaphas in John 11:49–52. Moreover, in Romans 3:4, Paul made an even stronger assertion saying that all human beings are liars (including Paul himself as he is the person writing this very statement). Many paradoxes in the Bible use self-negation. A few more difficult examples worthy of mention are the paradoxes of (1) self-denial (Mark 8:34), (2) saving or losing one’s life (Mark 8:35), and (3) servant leadership (Mark 9:35).

2.4. Matthew 22:23–33

The paradox of Matthew 22:23–33 deals with marriage and resurrection.

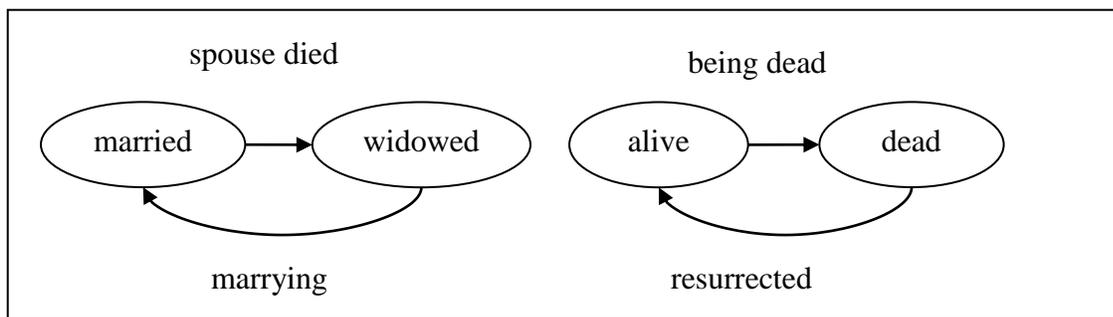


Figure 4. One’s Marital Status and Life Status in Matthew 22:23–33.

The paradoxical question here is used in order to trap Jesus in an intellectual and theological dilemma. No solution to this paradoxical question seems to exist until Jesus resolves it (Matthew 22:29–32). Initially resolving this question of whose wife the woman would be in eternity seems impossible in this world of the living. The marital status and spouse of the woman changed with each marriage following the subsequent deaths of her spouses. Additionally, her life status would be ever-changing as she transformed from the states of being alive, dead, and then resurrected. One may note her marital status in the cycle of being married, then widowed, and then married after remarriage. Similarly, her life status was in a cycle of being alive, dead, and then back to being alive after resurrection. This aspect of temporal-modal reasoning in a paradox of circularity brings our attention to an additional and critical feature of a paradox for being nonmonotonic. That is, instead of one to be married and then to stay married forever, the marital status of the woman is not monotonic (to stay same forever) but nonmonotonic (changing each time with her next marriage). At the same time, the identity of the woman’s husband changes with each new stage. Thus, the issue with regard to the identity of her husband is not absolute, but rather changes over time.

It is noteworthy that nonmonotonic reasoning is one of the most common motifs and themes in the Bible (e.g., Ecclesiastes 3:1–10; 7:14), seemingly contradictory in the framework of monotonic reasoning or principle. For example, if the righteous are to be blessed, and the evil are to be cursed (in the conventional paradigm of monotonic reasoning), then no valid justification exists for the suffering of a righteous man who is cursed or persecuted (as noted frequently in the biblical paradigm of nonmonotonic reasoning). A few similar classic examples in the Bible would make the case for Job’s suffering or a Christian who is blessed to be cursed (Matthew 5:10–12).

2.5. Matthew 22:41–46

The paradox in Matthew 22:41–46 extends the number of the constituents in the cycle.

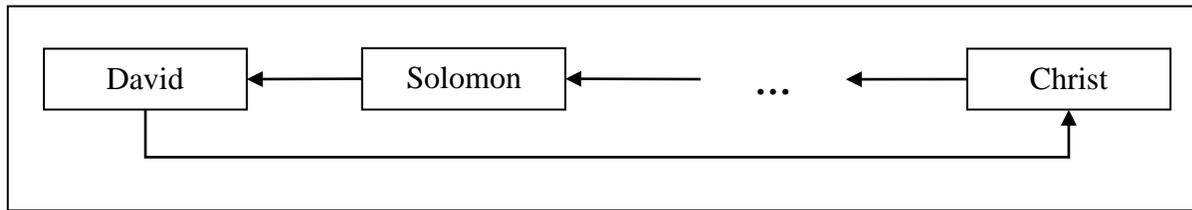


Figure 5. Lord-Servant relationship from David to Christ in Matthew 22:41-46

This example deals with the extended “father-son” relationship, which is compatible with the “lord-servant” relationship. A father who is also a king is the lord of his own son. This father-son relationship is further extended to the ancestor-descendant relationship. Then the question in Psalm 110:1 is why did David call the Christ, who is his own descendent, “my lord”? This clearly illustrates a circular relationship, which is a paradox, counterintuitive to the intended “father-son” relationship of David to the Christ, to be monotonic and linear. As shown in this example, some of the circular relationships may not be so clear or vivid at a lexical or syntactic level, but rather require a careful semantic analysis to make visible an underlying circular relationship.

In summary, we have surveyed and analyzed these five noteworthy and exemplary biblical paradoxes of circularity. A circular construct to form a circular relationship is detected and displayed on a lexical, syntactic, or semantic level. Further, a circular relationship can be complicated by a layer of negation as found in Titus 1:12. As noted in these examples, a cycle can be constructed with one concept in self-reference as in Exodus 3:14, two concepts in circular relationship as in John 14:10, many concepts chained in a cycle as in Matthew 22:41-46, one concept referring to a set where the concept is its member as in Titus 1:12, and a cycle with a negation. Some distinctive features with the biblical paradoxes are circular, modal, and nonmonotonic. The present list of these patterns and features in this paper is by no means complete or exhaustive, but rather is waiting to be explored and extended in future study.

3. Two Proof Methods in John 8:12-20

A noteworthy example of a self-reference being used as a proof method is found in John 8:12-20. Here Jesus makes the claim himself saying, “I am the light of the world” (Ἐγώ εἰμι τὸ φῶς τοῦ κόσμου) in John 8:12. With regard to this claim, the Pharisees immediately accused Jesus of projecting an invalid self-testimony. One should note that the testimony of Jesus is indeed a circular reasoning, as it is also acknowledged by Jesus (σὺ περὶ σεαυτοῦ μαρτυρεῖς· ἡ μαρτυρία σου οὐκ ἔστιν ἀληθής) in John 8:13. Further, Jesus defended the validity of his self-testimony (κἂν ἐγὼ μαρτυρῶ περὶ ἑμαυτοῦ, ἀληθής ἐστιν ἡ μαρτυρία μου) in John 8:14. Citing two witnesses according to the Law in his defense, Jesus further provided a lawful testimony (καὶ ἐν τῷ νόμῳ δὲ τῷ ὑμετέρῳ γέγραπται ὅτι δύο ἀνθρώπων ἡ μαρτυρία ἀληθής ἐστιν. ἐγὼ εἰμι ὁ μαρτυρῶν περὶ ἑμαυτοῦ καὶ μαρτυρεῖ περὶ ἐμοῦ ὁ πέμψας με πατήρ) in John 8:17-18. Thus, it is worthy to note the two distinctive proof methods presented by Jesus in John 8:12-18.

3.1. Two Proof Methods

First, using a circular (coinductive) reasoning (John 8:12), Jesus declared his self-testimony with his own justification in John 8:14. Here Jesus argued the validity of his self-testimony even when testifying on his own behalf. His argument and defense is based on his own supernatural and omniscient knowledge about himself of knowing where he came from and where he is going. In contrast to his own defense, Jesus argued that they (the accusers) did not know where Jesus came from or where Jesus was going. This claim further reveals that Jesus not only knows their inner thoughts (John 2:24-25), but also their origin and destination (John 8:44).

Second, using a lawful (inductive) reasoning (John 8:17), Jesus provided two witnesses in compliance with the acceptable legal requirement imposed by the Law (Deuteronomy 19:15). Interestingly, the accused (Jesus) was also qualified as a witness to defend himself. The accusers accepted at least a part of Jesus, but then sought the claimed second witness (the father of Jesus) to be in witness stance (John 8:19). Clearly, the accusers were willing to accept both witnesses (Jesus and his father) as mere men. Later, one may note at least one more independent witness

(John 9:29–33) who is willing to stand up in the witness stance to defend the validity of the self-claim of Jesus as being the light of the world. He is the man born blind whom Jesus healed. He boldly came forward to testify for Jesus about who Jesus is (John 9:17) and from whence Jesus came (John 9:30–33).

3.2. John 8:16 versus John 5:31

From this perspective, two conflicting statements by Jesus found in John 5:31 and John 8:16, are worth noting, with respect to the validity of his own self-testimony. However, the conflict caused by these two statements could be easily resolved with a simple analysis of each context in its own modal aspect. In John 5:31, Jesus denied the validity of his own self-testimony, as this statement is valid according to the Law. In contrast to John 5:31, Jesus affirmed the validity of his self-testimony based on his own divine knowledge and self-reference (John 8:16). As noted in the paradox of paying tax to Caesar or not (Matthew 22:23–33), a model set of two contradicting interpretations or solutions could be valid. Thus in these multi-modal layers of one according to the Law, and the other according to the divine self-reference, one may resolve these seemingly-contradicting claims of Jesus in John 5:31 versus John 8:14. That is, each claim has its own valid model in either lawful or divine aspect. With this insight, one may take a fresh look at the four witnessing agents (John 5:31–39) provided to substantiate the proof that Jesus is the Christ (John 20:31). The four-fold proof is based on John who is a credible prophet (Isaiah 39:3–9; John 1:19–37), the work of the miracles as the divine sign (John 2:11; 20:30–31), the father as a witness (John 1:33–34; 12:28), and the Scriptures as the proof text for the Christ (John 5:39). As noted in John 8:17, it is sufficient for Jesus to present one more individual other than himself to defend his divine “I am” claim, according to the Law. Furthermore, the miracles performed by Jesus are used as the signs and, thus, were a means of proof to authenticate the divine “I am” claims of Jesus, as noted in John 10:25, 38.

3.3. John 8:12-20 versus Exodus 3:14–15

One may notice a close parallel between John 8:12–20 and Exodus 3:14–15 with respect to the pattern of the two-proof method. First, in Exodus 3:14, God identifies himself with respect to himself. This is clearly a self-referencing proof method, which is clearly a circular proof method. Second, in Exodus 3:15, God identifies himself by referring the people of Israel to their most credible three witnesses: Abraham, Isaac, and Jacob. These three persons are not only the founding fathers of the people of Israel, but also are the living witnesses of the living God (Matthew 22:32). This is clearly a lawful and inductive proof method.

A similar provision for a proof method and an authentication process is explicitly stated and mandated in the Bible (Deuteronomy 18:21–22) to safeguard against a false prophet (Exodus 20:16) toward a secure system of prophecy and revelation. Many examples are found in the Bible for a model of “identification-authentication” or “challenge-response,” for example, with John (John 1:19–27) and Jesus (John 6:30). The secure system of biblical communication warrants the challenge-response model, using the “sign” as one of the most prominent proof methods in the Bible (Deuteronomy 18:19–22; Isaiah 7:10–17; John 20:30–31). This elevates the necessity and interest toward the biblical concept of sign as a proof method in the identification-authentication process (e.g., John 2:11). Conversely, one may find the developing stages or processes of individual faith-models as a proof process (e.g., for Peter in John) in the formation, growth, and maturity of one’s faith. For example, Peter has gone through a series of the stages in faith through (1) the indirect, albeit credible personal testimony of his brother Andrew (John 1:35–42), (2) a direct and concrete self-experience of the unshakable “sign” as a proof (John 2:11), (3) a doubt and controversy (John 6:60–71), (4) a confirmation of the faith (John 16:29–31), (5) an ultimate shake-and-break test (John 13:36–38 and 16:32–33 for John 18:25–27), and (6) a commencement (John 21:15–18). Further, one may extend the current view and scope of paradox beyond the literary genre of discourse and rhetoric into the realm of action and a proof method, to view the miraculous signs in the Bible under the category of paradox in action, and as a proof to enhance the meaning of paradox in word or deed (as noted in Luke 5:26).

4. “I am” Sayings in John

One distinctive narrative-feature in John is the abundant usage of the first person pronoun (ἐγώ) and the “I am” phrase (ἐγώ εἰμι) narrated by Jesus. As noted by the Pharisees in John 8:13, all of these metaphorical “I am”

sayings are essentially self-testimonies of Jesus.

4.1. “I am” as Interpretive Key

Two metaphorical “I am” sayings are found in John 10:1–18. The discourse begins with a figure of speech (*παροιμία*—parable, proverb, or riddle) in John 10:1–5. For a practical reason, this metaphorical story in John 10:1–5 is viewed as a proverbial “parable” in this paper. The discourse begins with a distinctive “amen, amen” introductory opening statement by Jesus (John 10:1), uniquely observed in John. As usual, the audience does not understand the meaning of the parable, that is, its hidden and intended message. Noting the inability of the audience to understand in John 10:6, Jesus provides a key (an aid to the audience) to unlock one part of the hidden message (its intended meaning or interpretation) of the parable, using “I am” (*ἐγώ εἰμι*) as the key to the partial and modal interpretation of the parable. The first key is “I am” the gate, designating the true identity of the gate (John 10:7). The second key is “I am” the good shepherd, designating the true identity of the good shepherd (John 10:11). A few interpretive notes should be understood. First, a distinctive modal approach could be made possible to allow at least two interpretive solutions. Second, the true identities of many other metaphorical figures in the parable are still hidden (e.g., who are the gatekeeper, the sheep, the thieves, the hireling, or the wolf in the story?). Thus these two keys of “I am” do not provide a complete solution (interpretation) of the parable in John 10:1–5, but rather each to a partial solution.

A few distinctive features of the Johannine parable in John 10:1–5 with its interpretation in John 10:7–18 should be noted in contrast with the synoptic parables. For example, the parable of the seed-sower in Matthew 13:3–9 (in a fixed and static content) with its complete interpretation in Matthew 13:18–23 provides an exemplary case to be compared with the parable and its interpretation in John 10:1–18. The parable in John 10:1–5 is explained (or interpreted) with the first-person key of “I am” to reveal the hidden or intended meaning. In contrast, the figures in the synoptic parables and their interpretations are mostly in third-person and rarely are in second-person (Matthew 5:13–16). Second, the parable in John 10:1–18 is interpreted partially to the general audience. In contrast, the parable in Matthew 13:3–9 is interpreted completely and to the disciples only in Matthew 13:18–23. Third, the parable in John 10:1–18 is unfolding as it is being interpreted with the keys, by expanding or adding to the story of the parable with further parabolic materials (blended with the intended message), in a continuous and dynamic narrative-frame. In contrast to John 10:1–18, the two stages of presentation and interpretation of a parable are usually clearly marked and distinguishable. Thus, the content of a parable in scope is mostly fixed or static to be interpreted, and exclusively for the disciples (e.g., Matthew 13:10–13). Finally, the effect of the rhetoric process and framework of the parable in John 10:1–18 generated catastrophic offense, controversy, and disturbance among the general audience (John 10:19–21). In contrast, in the synoptic gospels, the effect and outcome of the telling of a parable was mostly met with the general audience exhibiting no understanding followed by a general sense of bewilderment, but with the disciples learning a significant lesson (e.g., Matthew 13:10–17, 36; 14:51; 15:15; 16:6–12; 17:10–13).

This pattern in John 10 is clearly observed in John 6. First, Jesus claimed to be the “bread of life” (John 6:35), using “I am” as the key to unlock the story of “the true bread of God” from heaven—the one who gives life to the world (John 6:31–34). Second, Jesus gave a partial interpretation of the parable to his audience, thus inviting them to eat his flesh (meaning to receive his Word, as explained in John 6:63). Third, Jesus expanded the parable of the bread of life (as his flesh) to be eaten, and the living water (as his blood) to be drunk (John 6:35). Thus, this rhetoric process and framework (blending of real and symbolic concepts) generates a catastrophic confusion, disturbance, and controversy, especially among the Jews (as noted in John 6:41, 52, 60, 66) as the story unfolded with a partial interpretation and with additional materials in the form of a metaphor.

4.2. A Unifying Framework for “I am” Sayings in John

This new perspective provides a fresh new insight to the understanding of Jesus’ metaphorical “I am” sayings found in John. These “I am” sayings are used as the keys to revealing the true identity of the metaphorical figures presented by Jesus in the form of self-claims. These metaphorical “I am” figures include: the bread of life, the living water, the gate for the sheep, and the good shepherd. Further, somewhat similar, yet different presentations of the metaphorical “I am” sayings are found in John 8:12 (“I am” the light of the world), John 11:25

“I am” the resurrection and the life), John 14:6 (“I am” the way and the truth and the life), and John 15:1 (“I am” the true vine).

First, there is no preceding parable (that is, a metaphorical story or a proverbial teaching in figure of speech), in an explicit form, as noted in John 10:1-5 or John 6:31-34. However, a real-life case (experience as a story) is used to support the self-claim of Jesus. For example, the self-claim of “I am” the light of the world in John 8:12 is clearly substantiated with the story of a man born blind gaining his sight in John 9, and the self-claim of “I am” the resurrection and the life in John 11:25 is clearly manifested in the resurrection of the dead Lazarus in John 11. Second, the message of the “I am” saying encountered various responses and reactions varying from hostility to loyalty with regard to the accusation in John 8:13 or the affirmation in John 11:27. Third, the discourse in John 8:12-59 is engaged by the Jews with hostility and aggression. In contrast, Jesus and his disciples engage the discourses in John 11, John 14, and John 15, with the result of the disciples’ faith being enhanced. Finally, the setting of the discourse in John 8:12-59 is totally open to the public. In contrast, the setting of the discourse in John 14-15 is that of an intimate and closed fellowship, whereas the setting of John 11:25 is in public, but Jesus addressed his “I am” saying to one person (Martha) in particular. Jesus’ audience (the Jews) understood relatively well the “I am” the light of the world message in John 8:12. They challenged and accused him of self-claiming (in contrast to John 6:41, 52, 60, 66). In addition, the rich thematic topics in John 8:12-59 are observed with an array of the dualistic (mutually negating or bipolar) concepts of: (1) light versus darkness, (2) life versus death, (3) freedom in the Son versus slavery under the sin, (4) truth versus lies, and (5) God the Father versus Devil the father.

This concludes a brief survey of the metaphorical “I am” sayings in John. As noted, John contains two classes of metaphorical “I am” sayings. The first class consists of metaphorical “I am” sayings with a preceding metaphorical (or typological) story of which the identity (of the key figure or object) is to be interpreted (revealed) with “I am” as the key, as noted in John 6:31-34 (with John 6:35-71) and John 10:1-5 (with John 10:6-18). The second class (pattern) consists of metaphorical “I am” sayings without a preceding metaphorical story. However, the story is assumed to be well-known to the audience (as a background theory or as common sense). Therefore, there is no need for Jesus to repeat the well-known story, but rather to reveal the true identity of the key figure of the well-known story with “I am” as the key. This rhetorical pattern seems to keep recurring in John 8:12 (“I am” the light of the world), John 11:25 (“I am” the resurrection and the life), John 14:6 (“I am” the way and the truth and the life), and John 15:1 (“I am” the true vine). All the predicates of these “I am” sayings are well-known to the audience with their familiarity with the Old Testament stories. Some of the well-known examples in the Old Testament with the metaphorical “I am” sayings in John include: (1) the bread from heaven in John 6:31 with Exodus 16:15, (2) the light of the world in John 8:12 with Psalm 36:9, Isaiah 9:1-3 (also noted in Matthew 4:14-16), and Isaiah 42:6-7, and (3) the good shepherd in John 10:11 with Psalm 23, Isaiah 40:10-11, Jeremiah 23:1-6, and Ezekiel 34:11-16.

5. Circularity in the Johannine Epistles and the Revelation of John

A brief survey on the Johannine Epistles and the Revelation reveals a few interesting patterns with respect to the “I am” sayings and circular in-relationships.¹⁰ First, the metaphorical “I am” saying as noted in John is observed only in the Revelation (1:8, 17; 21:6; 22:13). Second, the circular in-relationships (of “be-in” and “dwell-in”) are observed only in the Johannine Epistles (especially in 1 John). These patterns are somewhat expected within the corresponding literary genre of each book. For example, 1 John is an epistolary work where, as the author, John is addressing his fellow Christian brothers, expressing and reflecting in first-person monologue his own understanding of God the father and his son (as both persons are expressed in third person). In the Johannine epistles, no intervening external event or engaging multi-person discourse is present (in contrast to John or the Revelation). The Revelation is a prophetic and apocalyptic document (Revelation 1:1; 22:18-19) containing a vivid eyewitness report from John’s perspective. John often witnessed and vividly recorded the “I am” sayings of Jesus in first person.

The circular in-relationships (with the verb “be” or “dwell,” or without a verb but understood in context)

¹⁰ Raymond E. Brown, *The Epistles of John* (New Haven, CT: Yale University Press, 1995): 195-96; Edward Malatesta, *Interiority and Covenant: A Study of Einai En and Menein En in the First Letter of Saint John [Analecta Biblica 69]* (San Francisco: Biblical Institute Press, 1978): 34-36.

are found in abundance in 1 John with rich and insightful theological assertions and implications about Christians (as being born of God and in God). For example, one in Jesus or being born of God does not sin and cannot do sin (1 John 3:6-9; 5:18). Similar claims regarding sinlessness or impeccability (1 John 3:9; 5:18) are also noteworthy for everyone “born of God.” As the author of 1 John addressed his words to “my children” (1 John 2:1), the purpose of 1 John is distinctively pastoral and exhortative (1 John 2:1), to build and maintain a strong and effective Christian identity and fellowship, and to guard against those who deceive (1 John 2:26) and who are antichrists (1 John 2:22).

Dodd (1946), followed by Malatesta (1978) and Brown (1982), notes about this “remain in” (or “abide in”) formula in 1 John 2:5, as characteristic of the Fourth Gospel, “not found (verbally) in the sources which are our authorities for Hellenistic mysticism.”¹¹ Brown (1982) further elaborates this concept of divine indwelling as an “important Johannine idea in the Old Testament and intertestamental Jewish writing” and “to keep the Johannine view of divine immanence distinctive,” noting that “this formula avoids that identification with divinity that marked many Hellenistic systems” by Hauck (Kittel 4:576). Moreover, the circular indwelling relationships should be recognized to enhance this line of argument for the Johannine characteristics and distinctiveness toward the authorship of John.

5.1 Everyone “Born of God” in 1 John 3:9

One of the difficult problems in 1 John is a paradox of: (1) the Christian as a sinner in need of confession of one’s own sin, and thus in need of God’s forgiveness (1 John 1:8-10); and (2) the impeccability of the Christian who does not sin and is not even able to sin (1 John 3:9 and 5:18). Stott (1964), followed by Brown (1982), presents various solutions, including seven different approaches for the harmony of 1 John 1:8-10 versus 3:9. These proposed solutions include: (1) two different writers (of 1 John) in contradiction, (2) two different groups of adversaries with different polemics to be addressed, (3) two specific kinds of sin (for example, forgivable or unforgivable) in the author’s understanding, (4) two groups of Christians (for example, immature or mature) in the author’s understanding, (5) two modes of sinning with grammatical emphasis (for example, continual or habitual sin or not), (6) two different levels of Christians (real versus ideal), and (7) two literary contexts (for example, *kerygmatic* or apocalyptic). Further, for “sin unto death,” along with a prayer of petition (for a Christian brother’s sin) in 1 John 5:16, Brown (1982) groups various solutions into four classifications: (1) different types of petitions, (2) different types of penalties, (3) different types of sins, and (4) different types of people. As noted, these arguments or classifications are characterized by modal reasoning (with different aspects). Five points are to be noted.

First, concerning the passages of 1 John 1:8-10 and 5:16, the primary goal is for the repentance and forgiveness of the sins of Christians with two modes of prayer: (1) by one’s own prayer of confession, and (2) by other Christians’ prayers of petition (intercession). In these two modes of prayer, both prayers are addressed by and to Christians (whether their faith is real or apparent), with one purpose in mind—for God’s forgiveness of one’s personal sin. Further non-Christians (those yet to be saved) are excluded as the object-person of one’s intercessory prayer, that is, as intended for “brothers only” (1 John 5:16).

Second, concerning the passages of 1 John 1:8-10 and 2:1-2, one presumption (with the propitiation of Jesus Christ, the righteous advocate for all the sins of the entire world) is that no sin is unforgivable for those who confess in repentance and faith in Jesus Christ. This qualification of the unlimited and unconditional divine pardon should be the scope of forgiveness with respect to sin, which is also applied to the Christian’s prayer of petition for the sins of other Christians. The only sin excluded from both the confession and petition of Christians then is the sin of making God a liar (1 John 1:10; 5:10), which occurs when one refuses to believe in God (as explained in 1 John 5:10), and not believing in God’s witness about Jesus: (1) who is Christ and the son of God and who came in flesh (1 John 4:2, 9-10, 14-15; 5:10), (2) who died for our sins to save us, for God so loved the world and desired them to be saved through his son (1 John 3:16; 4:7-10), (3) who is the righteous advocate before God (1 John 2:1-2), (4) for all Christians who believe in him and thus to obey his commandments (1 John 2:3), (5) to hold steadfast and victorious in faith, truth, and love until his second coming (1 John 2:28), (6) as the propitiation, not only for “our” sins, but also for sins of the entire world (past, present, and future) (1 John 2:1-2), and (7) to destroy the works of

¹¹ Dodd, C. H. *The Johannine Epistles*. (London: Hodder and Stoughton. 1946): 32.

Satan (1 John 3:8). Thus, those who claim to be Christians, but who still commit this “sin unto death” throughout their lives unto their death are then referred to in in 1 John (1 John 2:18, 22, 26; 4:1, 3) with terms such as antichrists, liars, false prophets, and deceivers (of Christians and the world).

Third, this understanding about the sin (unto death) in 1 John is also consistent with the conviction of the Spirit of the truth (John 16:7–11), first on the sin (John 16:9) of not believing in Jesus Christ as the savior of the world (John 12:32–33; 1 John 4:14–15). The second conviction of the Holy Spirit is in regard to righteousness (John 16:10) with faith in Jesus Christ in his ascension, and thus about his physical absence here-and-now in this world, being seated at the right hand of the father as the righteous Son of God and Christ (Psalm 110:1; Matthew 22:41–46), and thereafter for the second coming of Jesus Christ (1 John 2:28) as the savior and the judge of the world. The third conviction of the Holy Spirit is about the judgment (John 16:11), that the prince of the world (Satan) has been judged (John 12:31, 1 John 3:8). Additionally, this is consistent with 1 John 2:2, for Jesus died not only for the sins of Christians to be forgiven, but also for the forgiveness of the sins of the whole world as Jesus Christ is the judge of the world (Psalm 2:9), including the root cause of the evil of this world, that is, the prince of the world (Satan) and to destroy the works of Satan (1 John 3:8).

For Christian apologetics and the defense of one’s faith, these three convictions in John 16:7–11 could be used very effectively and practically (with the messages side-by-side in 1 John). For example, the conviction is against false faith (1 John 1:1–2) for one’s salvation, as one may ask why one has to believe in the son of God (Jesus Christ), that is, why not in God (the father) and “only” in God (without the son) for one’s salvation. If one wants to obey God, the will of God is for every individual to believe in the son of God (1 John 3:16; 4:2, 9–10, 14–15; 5:10). The second conviction is against the demand for the presence of Jesus Christ on this earth, here and now, if Jesus is truly real and alive. The third conviction is against a human rationale to postpone one’s conversion until the time of one’s death (even to the last minute of one’s deathbed) as long as it takes one to believe. However, as the prince of the world, Satan is pre-judged, the entire world of sinners are now awaiting the imminent and final judgment of God at any moment (John 3:18). Furthermore, this understanding of the sin unto death, with the conviction of the Holy Spirit, is then consistent with the blasphemy against the Holy Spirit (Matthew 12:31–32). For example, both Judas (Matthew 26:14–16; John 13:21–31; John 18:5) and Peter (John 13:37; 18:16–27) betrayed Jesus. Judas regretted his actions, which led him to commit suicide (Matthew 26; Acts 1:16–20), which was against God’s will for all sinners to repent and follow Jesus Christ, whereas Peter even betrayed Jesus three times, but repented in order to follow Jesus and become his entrusted disciple (John 21:15–17).

Fourth, 1 John 3:9 declares that everyone who is “born of God” does not sin, for his seed dwells in him and he is unable to sin for he is “one born of God” (Πᾶς ὁ γεγεννημένος ἐκ τοῦ θεοῦ ἁμαρτίαν οὐ ποιεῖ, ὅτι σπέρμα αὐτοῦ ἐν αὐτῷ μένει, καὶ οὐ δύναται ἁμαρτάνειν, ὅτι ἐκ τοῦ θεοῦ γεγέννηται). Here the subject-person (1 John 3:9) is expressed as “one born of God” (ὁ γεγεννημένος ἐκ τοῦ θεοῦ). This phrase “one born of God” is reused as the reason or the basis for “one born of God,” being unable to sin. This is clearly a circular reasoning as noted. That is, “one born of God” cannot sin because of the sheer nature of being “one born of God.” This line of reasoning is circular, in order to explain one personal characteristic of being sinless or impeccable as being “one born of God” (1 John 3:9). As a case for the paradox of circularity, this circularity gives a basis from which to apply modal and nonmonotonic reasoning to examine the passages in 1 John 3:9 and 5:18 with respect to 1 John 1:8–10.

Indeed, “sin” possesses a very different meaning for a person before and after being born of God. For each sin committed before being born of God, the wage is death (Romans 6:23). Being born of God abolishes the death penalty. One being born of God is then subjective to and accountable for the personal sins he or she has committed with respect to Christian discipline, to be forgiven (1 John 1:1–10) and sinless (1 John 3:9; 5:18) through confession of the committed sin to be forgiven (1 John 1:8–10), or with petition (intercessory prayer) for the sins of others (1 John 5:16), not to sin again or to commit habitual sins (1 John 2:1), and for one’s sanctification and perfection in purity (1 John 3:3).

5.2 Other Noteworthy Circular Expressions in 1 John

A few noteworthy patterns of circularity (circular expression) exist in Johannine Literature where similar patterns are noted in Section 2 with the selected examples. The first noteworthy circular expression is that of self-defining or

self-explaining a term where a term is defined, expressed, or explained by itself. One example in 1 John 3:7 is: “whoever does righteous is righteous” (ὁ ποιῶν τὴν δικαιοσύνην δίκαιός ἐστιν). The second noteworthy circular expression is that of a phrase or a statement referring to the whole. For example, a phrase (for example, “this book” in Revelation 22:7) refers to the entire book, which contains the phrase. Another example is for a phrase of a letter to refer to the whole letter (for example, 1 John 5:13). This pattern (that is, a member of a group points to the group itself) is noted in Section 2 for the selected examples with Titus 1:12. Many times no obvious paradox or contradiction is imposed to both speaker and readers as these expressions are commonly used and understood in one’s daily lives. The third noteworthy case is found in 1 John 4:12–16 where four occurrences of “abide” in-relationship are present, and are worthy to be noted as a Johannine “flower-bouquet” of circular “abide” in-relationships.

6. Critical Method to the Analysis of the Biblical Paradox of Circularity

This paper has presented and explored the new paradigm of coinductive reasoning and its application to the selected literary circular-constructs found in the Bible. Many difficult classical problems associated with these examples are identified, clarified, analyzed, and explained in a sound framework of logic using coinductive, modal, and nonmonotonic reasoning. A simple diagram on a lexical, syntactic, conceptual, or semantic level is used to detect and analyze circular construct. As a result, many of the apparent confusions or contradictions inherently built into these passages are now clearly understood and resolved in a sound framework of logic. The current approach and method to handling the biblical paradox of circularity has been demonstrated to be very promising and fruitful in the study of the New Testament. In addition, a few unexpected and delightful outcomes of this study should be observed, for example, (1) the parallel between Exodus 3:14–15 and John 8:12–20, and (2) a unifying interpretive framework of the metaphorical “I am” sayings in John.

6.1 What was the Real Problem Here?

After working through many difficult and challenging cases in this paper, we should pause and reflect to ask what we may have missed in the past. These paradoxical cases are well-known to present difficult problems. After working with several problems in this paper, we now possess sufficient knowledge about these problems and their common characteristics. We have come to understandings on these problems as they are closely related and should be considered to be a class of problems dealing with circularity in paradox. Some of the key identifying characteristics in logic are circularity, modality, and nonmonotonicity. Another interesting issue is how easy it is to verify an available solution, given the problem of paradox. For example, three paradoxical problems are presented in Matthew 22:15–46, with or without their solutions.

In an attempt to set a trap for Jesus, the Pharisees and the Herodians presented the first problem (Matthew 22:15–22) to him concerning paying taxes to Caesar. In a second attempt to set a trap for Jesus, the Sadducees presented an additional problem (Matthew 22:23–33) concerning resurrection and marriage. In order to shut their mouths, Jesus presented the third problem to the Pharisees (Matthew 22:41–46) concerning the Messiah addressing David as his lord in Psalm 110. We note several interesting points as follows. First, to assume that each problem is unsolved, and more likely unsolvable, by the contemporary Jews (notably by the Pharisees, the Herodians, and the Sadducees) at the time of Jesus is reasonable. Second, each problem is difficult, but its solution (provided by Jesus) is almost trivial, intuitive, and easily verifiable by anyone, including the Jews at that time. Third, no way exists to know how Jesus solved these problems, but a clear indication exists that Jesus possessed the solutions. Fourth, we (the contemporary biblical scholarship in the past, including the Jews at the time of Jesus) have treated each problem (with its solution if given) case-by-case (as if these problems are unrelated and mutually independent). Fifth, seemingly, we possessed no clear understanding or explanation as to how these problems are solved (for example, by Jesus) or even constructed.

Let us take another look at the paradox in Matthew 22:23–33, concerning the problem of resurrection with regard to marriage. As discussed, a vicious circle exists (in the state of being alive, dead, and to be alive again after resurrection), which meant to be linear (from being alive to being dead). Meant to be exclusive, it is mixed with the competing legal demand of each brother in this marriage relationship (as a legitimate husband) after the resurrection,

in the absence of any compromise for the exclusive legal right of each husband upon the woman.

The Sadducees, who did not believe in the resurrection, presented this controversial problem to Jesus. Most likely the Pharisees at the time of Jesus heard the same question asked many times by the Sadducees, spending many sleepless nights praying for an answer. Thus, one may wonder how the Pharisees would respond if they were challenged with the same question. The Pharisees would say that they have no idea or do not know all the details, but that they believe in God almighty who would take care of all these things. The Pharisees might have added one more comment, saying that the Sadducees should cast away their doubts and simply trust God. In reply, the Sadducees would have accused the Pharisees of their stubbornness and blind faith, questioning how one could believe that which is untrue (contradictory).

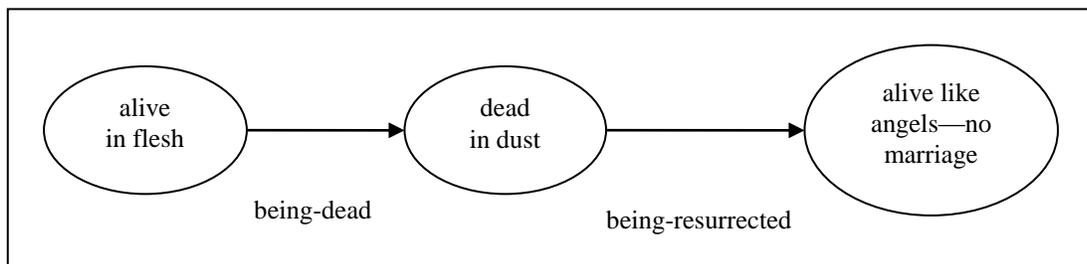


Figure 6. Life-Status (alive, dead, and resurrected) in Matthew 22:23–33

Contemporary Christians are seemingly repeating the same old *vicious circle*, in which the Pharisees preside on one side, and the Sadducees preside on the other side, with consideration being given to some of these difficult theological problems of paradox. However, once we understand the inherent nature of some of these problems, that is, paradox of circularity, we then have a good handle with which to work toward viable solutions, hopefully in a manner satisfactory to both sides. To reconstruct some of the early Christian understanding of paradox, and finally to be able to solve some of these difficult and controversial problems in biblical scholarship since Jesus and the apostles, took almost two thousand years.

6.2 A New Approach to the Paradox of Circularity

In this paper, we have developed and presented a few ways to detect or identify circularity as a potential root cause in the problem of paradox. To summarize, three ways can detect circularity as a potential cause of a paradox under investigation.

First, a simple diagram on a lexical, syntactic, conceptual, or semantic level is applied to detect a circular-construct of the passage under investigation. From this initial investigation, one may detect or relate a problem, which could be caused by or rooted in this circularity with modal and nonmonotonic reasoning. One example for this approach is the circular in-relationship of the father and the son in John 14:10 or the paradoxical examples in Matthew 22:15–46.

Second, it is to detect a real or apparent contradiction presented in the text to trigger a possibility of circular, modal, and nonmonotonic reasoning. Many of these problems are well-known and are traditionally classified as very difficult or even unsolvable problems. One example for this approach is the well-known, aged problem of sin-states versus sinless-states of Christians presented in 1 John, to detect and apply the circularity in 1 John 3:9, thus to be resolved with circular, modal, and nonmonotonic reasoning. Another noteworthy example is the conflicting statements by Jesus in John 5:31 versus John 8:16 for the validity (truth) of his own testimony. With multi-modal layers, one can easily resolve the contradiction imposed in these passages.

Third, the biblical passage presents two distinctive proofs with one including distinctively coinductive reasoning. Found in John 8:12–20, one example is the “I am” saying with two proof methods. As closely investigated, the passage presents two distinctive proof methods, which have been undermined or overlooked by the majority of past biblical scholarship. Further, this discovery of coinductive proof method by Jesus then opens up new insight, innovative breakthrough, and a novel (hermeneutical) solution to the “I am” sayings in John. This

provides fresh ground from which to understand and unify all of the metaphorical “I am” sayings of Jesus in John. In addition, it is noted that a close parallel exists between Exodus 3:14–15 (by God) and John 8:12–20 (by Jesus) with respect to two distinctive proof-methods.

As noted (for example, with Matthew 22:23–33), a (model) set of two conflicting solutions (models or interpretations) could be valid. Thus, to have two conflicting answers is not necessarily a contradiction, but rather a possibility of valid modal solutions. Furthermore, circular reasoning can be used in wrong or invalid manners. For example, if one’s assumption in an argument is invalid, then one’s entire argument is invalid— whether deduction, induction, or coinduction is used. For example, the case of a stranger demanding one to trust him “simply because he says so” is circular reasoning, but is not to be taken seriously by any mature and responsible person. Next, we will give a brief description of two methods in logic (induction and coinduction) as they have been used somewhat informally in this paper.

6.3 Two *a priori* Methods of Logic: Induction and Coinduction

In contrast to induction (inductive reasoning), coinduction (coinductive reasoning) is discussed and contrasted in this paper with the selected examples as a critical method in biblical exegesis and hermeneutics. As surveyed and discussed, these two distinctive ways of reasoning are found in abundance—not only in the Bible, but also in our daily lives. Along with deduction, induction, and coinduction are *a priori* methods in logic. Let us take another look at induction and coinduction.

Induction is a familiar term, along with inductive reasoning, inductive logic, or even inductive Bible study. Induction corresponds to well-founded structures from which a basis serves as the foundation for building more complex structures. An object constructed in inductive definition is called a “well-founded” object, for a well-founded base is present, and a set of such objects is referred to as a well-founded set. Hence, the set of natural numbers constructed by induction (starting with zero and adding one, repeatedly and finitely many times) is a well-founded set. It does not include any infinite number, because the many infinite iterations of adding one to zero will never be terminated in finite steps. Thus, minimality implies that any infinite numbers are not members of the set of lists of numbers that are inductively defined. This is why any circularly constructed objects are not allowed in the framework of inductive reasoning. Inductive definitions correspond to the “least fixed point interpretation” of so-called “recursive” definitions. In summary, inductive definitions possess three components: initiality, iteration, and minimality.

In contrast, coinduction eliminates the initiality condition, and replaces the minimality condition with maximality. No requirement for initiality means that no need exists for a base-case in coinductive definitions. Coinductive definitions possess two components: iteration and maximality. Any object constructed in coinductive definition is referred to as a “not-well-founded” object, because no base is present. Further iteration of coinductive definition without a base is achieved by circular construct (as an infinite loop, being applied infinitely many times). Thus, while these examples and definitions may appear to be circular (or meaningless, as it seems to be), the definition is well-formed, since coinduction corresponds to the “greatest fixed-point interpretation” to allow infinite objects. The resulting formal system of reasoning (logic) is termed as “coinduction” (in coinductive reasoning or logic), in contrast to the traditional “induction” (in inductive reasoning or logic).

One descriptive example of inductive reasoning in the Bible is found in the genealogy of Jesus Christ, which is presented generation-by-generation in Luke 3:23–38. Here is the first man (Adam) who was created by God (initiality), with a “begot” relationship generation-by-generation (iteration), and finally down to Jesus Christ in a “finite” lineage (in finite steps of “begot”), no more and no less (minimality) as anyone in the genealogy can be traced from God step-by-step in finite steps. Similarly, one descriptive example of coinductive reasoning in the Bible is found in Hebrews 7:1–3. This example is in regard to Melchizedek who is described as: (1) without father or mother, without genealogy, without beginning of days (that is, no initiality), (2) without end of life (maximality), and (3) being a priest (that is, iteration, of a priestly ministry year-by-year) forever. The “be-like” relationships (Hebrews 7:3, 15) should be identified as the key circular construct connecting Melchizedek and the Son of God.

One misleading view on minimality in induction is a tendency for a “one and only one” (best) model or

valid interpretation (if one exists). The reflection of this misconception in biblical scholarship is the pervasive and persistent tendency toward “one and only one” (best) interpretation in the contemporary biblical exegesis and interpretation. Allowing the *possible world* semantics, it is possible to justify an array of many valid interpretations in exegesis where some valid interpretations could be in conflict with (contradictory toward) some other valid interpretations. A classic example in contemporary New Testament scholarship with pioneering and successful application of modal logic is found in the works of Cullmann (1946; 1965).¹² In the framework of the salvation history (*Heilsgeschichte*), the two-stage coming of the Kingdom of God is expressed in temporal-modal logic of “already” and “not yet” in tension (Luke 17:20–30). To uncover the underlying critical method in temporal-modal logic, and to be recognized correctly and appreciated rightfully, took over a half-century.

Of note, the scholarly tradition of inductive reasoning and its opposition against modal reasoning can be retraced to Kant (1781) and to the omission of modality by Frege (1879) in his pioneering groundwork of modern logic for propositional and higher-order logic.¹³ For an excellent introduction to coinduction, the reader is referred to Kripke (1975) and Barwise and Moss (1996), and to Fitting and Mendelsohn (1998) for an excellent introduction to modal logic (including the brief introduction to Aristotle’s work in modal logic).¹⁴

6.4 Biblical Exegesis and Interpretation with Circular Reasoning

One may wonder what difference it would make with or without coinductive (circular) reasoning in biblical exegesis and interpretation. First, it is to acknowledge and understand the subtle difference between the two methods in logic (induction and coinduction), and thus in one’s exegesis. Second, each method (induction or coinduction) implies its own semantics (meanings), and thus in one’s exegesis. In inductive reasoning, circularity has no meaning (nonsense), but is treated as a purely literary metaphor which has no sense (that is, nonsense), to be neglected, ignored, or deconstructed by the reader to give it new meaning (personal and subjective). Third, coinductive, modal, and nonmonotonic reasoning provide a new perspective and paradigm to biblical exegesis. In this paper, it has been demonstrated to be effective and novel in solving many difficult problems with the selected passages, and further to provide a unifying solution (in possible world semantics) to the conflicting or contradicting opinions when presented with the traditional method of biblical exegesis. Fourth, it is distinctively computational. Further, the diagramming method to detect literary circularity (which is simple and intuitive to those with some lexical or syntactic diagramming) can be implemented without additional training or learning.

7. Conclusion

Selected examples of biblical paradoxes of circularity in the Bible and “I am” sayings in John have been investigated to shed new insight on the paradoxes of circularity presented in this paper. The new perspective and paradigm of circular (coinductive) reasoning and its application to the biblical texts are presented and analyzed. Various literary structures in paradoxical circularity have been noted and analyzed. These circular patterns include: (1) one concept in self-referencing (e.g., “I am who I am” in Exodus 3:14), (2) two concepts in mutual-referencing (e.g., “I am in the father and the father is in me” in John 14:10), (3) many concepts in a cycle with a directed relationship (e.g., lord-servant relationship, from David to his descendants including Christ, back to David in Matthew 22:41–46), and (4) one concept as an element, referring to a set or a group of which the concept is a member (e.g., “all Cretans are always liars” by a Cretan prophet, in Titus 1:12). Two proof methods in John 8:12–20

¹²Oscar Cullmann, *Christus und die Zeit. Die urchristliche Zeit und Geschichtsauffassung*. (Zollikon-Zürich: 1946), Trans. *Christ and Time*. (London: 1962); Oscar Cullmann, *Heil als Geschichte. Heilsgeschichtliche Existenz im Neuen Testament*. (Tubingen; 1965), Trans. *Salvation in History* (SCM-Canterbury Press Ltd. 1967).

¹³*Immanuel Kant’s Critique of Pure Reason*. (London: Macmillan & Co.:1964), Translation by Norman Kemp Smith; *Translations from the philosophical Writings of Gottlob Frege*. (Oxford: Basil Blackwell. P. Geach and M. Black editors: 1952).

¹⁴Saul A. Kripke, “Outline of a Theory of Truth,” *Journal of Philosophy* 72, no. 19 (1975): 690–716; Jon Barwise and Lawrence S. Moss, *Vicious Circles* (Stanford, CA: Center for the Study of Language and Information Lecture Notes, 2004); M. Fitting and Richard L. Mendelsohn, *First-Order Modal Logic*, softcover reprint of the original 1st ed. 1998 (New York: Springer, 1999).

are examined and compared. This provides a clear case of both lawful (inductive) reasoning based on the Law and circular (coinductive) reasoning based on divine self-testimony being used as proof methods in the Bible. The discovery and presence of circular reasoning in John 8:12–20 offers a concrete basis for a new critical method in the New Testament study and a new interpretive paradigm for Jesus’ “I am” sayings in John. Furthermore, it is noted that Jesus’ “I am” sayings in John 10:1–39 are used to identify the true identity of the gate and the good shepherd in the metaphoric story in John 10:1–5. With this understanding, it is noted that each of Jesus’ metaphorical “I am” sayings in John functions as a (self-identifying) interpretive keys to the true identity of the central symbolic figure, as each story being unfolded and blended with what is real and what is symbolic, and thus reveals the true meaning of the parable (that is, its hidden and intended message). This new insight provides a unified framework of interpretation to understand some of the very difficult sayings of Jesus in John (e.g., “eat my flesh” and “drink my blood” in John 6).

The approach of this paper is distinctively computational in order to explore a new critical method toward computational literary criticism in biblical study as selected examples of the paradoxes of circularity are surveyed and analyzed. Distinctive and inherent characteristics of circularity, modality, and non-monotonicity are noted with the selected paradoxes. By no means is the scope of this paper complete or comprehensive; rather, further investigation and study are called for in the future. However, the current study does demonstrate a promising new prospective and novel approach, with some groundbreaking results to solve many classical and difficult problems dealing with the biblical paradoxes of circularity. The author’s hope is to bring a renewed interest, understanding, and excitement toward the study of biblical paradox in the twenty-first century.