

Googol-part Fugue: Another Imagination of Divine Providence and Game Theory

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Abstract

The problem of evil presents an intellectual hurdle for some to believe in a good and omnipotent God. The emergence of open theism could be seen as an attempt to make a stronger case for the free will defense. However, in denying divine foreknowledge as traditionally understood, open theism contradicts biblical revelation not only in its direct claims, but also when its logical implications for divine providence are worked out. The open theist Alan Rhoda has sought to explain through game theory how some degree of divine providence is possible under open theism. That explanation is astonishing since the open theist view of libertarian free will is intrinsically at odd with the rational actor model presupposed by game theory. In this essay, the free will defense of open theism and two other responses to the problem of evil are examined. Game theory and other mathematical theorems are employed in illustrating the theological claims. This essay seeks to show that the historic Christian doctrine of divine sovereignty can be reasonably explained given the presence of evil. The key is to recognize the biblical picture of the present age as a development ground and worthiness-demonstrating trial for a perfectible authentic humanity, chosen for a glorious leadership role in the new heavens and new earth, where everything will be knowable, optimal, and predictable.

It is a perfect Monday for running in Boston. Sunny sky and the temperature in the mid-50s is something to be thankful for, as most still remember the 90 degree temperature endured in last year's marathon. Over 24-thousand runners participate in this year's event. Many more come from all over the world to cheer and witness this oldest continuously running marathon tradition, now in its 117th year.¹ Notably, some run today in memory of the 26 victims of the Sandy Hook Elementary School shooting in Newtown, Connecticut. The race began with 26 seconds of silence in memory of the victims. The 26-mile marker features a Newtown city seal surrounded by 26 stars.²

But if anyone had hoped that this day, April 15, 2013, would bring any peaceful closure to the senseless violence that took place at Sandy Hook, they would be sorely disappointed. At 2:49 pm, two bombs exploded 13 seconds and 210 yards apart near the finish line. Three people were killed and 264 injured, with some losing their limbs, leaving a bloody and gruesome scene.³

"Who did this?" The coincidental symbolic significance of April 15 both as the Patriot Day and the Tax Day certainly didn't go unnoticed, not the least by those who always have a proverbial ax to grind either against radical Islam or the Tea Party movement.⁴

¹The Boston Marathon began in 1897, inspired by the first modern Summer Olympics held in Athens, Greece the preceding year. It is one the six major world marathons and attracts almost half a million visitors to Boston every year.

Boston Athletic Association. "Boston Marathon History: Boston Marathon Facts" (<http://www.baa.org/races/boston-marathon/boston-marathon-history/boston-marathon-facts.aspx>)

²RT, 4/16/2013. "Compound tragedy: Boston Marathon blasts mar memorial for Sandy Hook victims" (<http://rt.com/usa/newtown-families-boston-marathon-unharmed-917/>)

³Wikipedia. "Boston Marathon bombings" (http://en.wikipedia.org/wiki/Boston_Marathon_bombings). The Boston Globe. "The Boston Marathon bombings" (<http://www.bostonglobe.com/metro/specials/boston-marathon-explosions>)

⁴For example, The Huffington Post, 4/16/23. "Tea Party Nation Blames Boston Bombing on Obama, 'Radical Islam'" (http://www.huffingtonpost.com/2013/04/16/tea-party-nation-boston-bombing_n_3094621.html)

The investigation reached a turning point when the bombing suspects were identified through CCTV captured videos. On Thursday, the FBI decided to “crowd-source” the investigation by releasing the videos, expressing hope that the public would “rat them out.” Later the same night, a MIT policeman was gunned down in Cambridge and a public transit policeman was seriously wounded. The owner of a hijacked vehicle managed to escape, connecting the shootings to the bombing suspects. The authority chased down the vehicle in the neighboring Watertown. One suspect was killed and another escaped. Both the gunned down MIT policeman and the killed suspect were 26-year-old.⁵

Much of the metropolitan Boston was in an unprecedented lock-down on Friday, even though block-by-block search failed to capture the escaped suspect. Serendipitously, as the authority suspended the search leaving all Boston residents to brace for the uncertainty of the nightfall, a resident in Watertown reported spotting a bloody man hiding inside his boat in the backyard. The suspect was captured live after a round of gunshots. President Obama held a prime time news conference to bring the tragic week to a close.⁶

A few days later, the 26-year-old man who managed to escape from his hijacked SUV granted the Boston Globe an exclusive interview. “The story of that night unfolds like a Tarantino movie,” the journalist observes, “bursts of harrowing action laced with dark humor and dialogue absurd for its ordinaries, reminders of just how young the men in the car were. Girls, credit limits for students, the marvels of the Mercedes ML 350 and the iPhone 5, whether anyone still listens to CDs ...”⁷

If Tarantino movies resemble real life stories, it is because one element always seems intentionally elusive. “*What is the point of all these?*” In real life, meaning is the one question that many may ask but few volunteer to answer. When the subject is gratuitous evil, is there ever a speakable *why* behind the who, when, where, and how? Yet, if not, how do we even begin to make sense of life?

Dark is the New Black

When I originally proposed this presentation, I had in mind a number of **game theory**ⁱ based arguments directed against **open theism**ⁱⁱ that demonstrate how mathematical concepts could be helpful in clarifying theological debates among Christians and illustrating biblical concepts to scientific-minded unbelievers. The recent tragedy in Boston inspired me to rearrange my materials. At the heart of open theism is the free will defense against the problem of evil, and that apologetic impulse must be considered. In this final form of the essay, I have repainted my arguments with the problem of evil as the background. In this section, I will state the problem of evil and survey its contemporary relevance. Then, in the following sections:-

- The Free Will Argument of Open Theism: I outline the reasoning of open theism by placing the free will defense as its principal premise.
- Divine Providence and Game Theory: I argue against an open theist proposal that by appealing

Siorta, David. Salon.com, 4/16/2013. “Let's hope the Boston Marathon bomber is a white American”
(http://www.salon.com/2013/04/16/lets_hope_the_boston_marathon_bomber_is_a_white_american/)

⁵Boston.com, 4/19/2013. “Slain MIT Officer Sean Collier remembered as brave, devoted policeman”
(<http://www.boston.com/metrodesk/2013/04/19/mit-police-officer-sean-collier-killed-the-line-duty-during-confrontation-with-marathon-bombing-suspects/okOsk0WUnFyGB1yQ6CxuBI/story.html>)

⁶PBS News Hour, 4/19/2013. “President Obama's Statement Following Arrest of Bombing Suspect”
(<http://www.youtube.com/watch?v=R6c6aKX9fu4>)

⁷Boston.com, 4/25/2013. “Carjack victim recounts his harrowing night”
(<http://www.boston.com/metrodesk/2013/04/25/carjack-victim-recounts-his-harrowing-night/BhQWGzarWee8MZ6KtMHJNN/story.html>)

The Boston Globe, 4/26/2013. “Interviewing 'Danny'”
(<http://www.bostonglobe.com/2013/04/26/BJQU6L0PZwaKJYdL7VOnIJ/story.html>)

to game theory, divine providence becomes possible under open theism. I contend that the **rational actor**ⁱⁱⁱ in game theory and the **libertarian free will**^{iv} actor in open theism are irreconcilable.

- **Humanity 2.0 in Googol-part Fugue:** I submit that the compatibility of divine foreknowledge and human freedom is quite conceivable if humanity is endowed with perfect knowledge and wisdom in the **new heavens and new earth**.^v Basing my imagination in part on **optimization theory**^{vi}, I contend that the perfect humanity will choose rationally, optimally, and predictably. Hence, the future would be fully foreseeable even for human beings, not to mention God. The conceivability of such a future serves as a counter-example to the claim that divine foreknowledge and human freedom are logically contradictory.
- **Soul Making:** I examine the soul making theodicy which sees the adversity of the present age as a necessary condition for the development of the human soul. I suggest that the **incompleteness theorems**^{vii} may help illustrate why certain experiences such as humility, faith, hope, compassion, and forgiveness are possibly obtainable in the state of imperfect knowledge, which makes the present age necessary. The ensemble methods in **statistical learning theory**^{viii} may serve as a model for the deliberative process by which life perspectives are integrated.
- **Humanity on Trial:** I suggest that the notion of “theodicy” is ultimately misleading because humanity is the one on trial. The worthiness of humanity to serve as the ruler of the creation is being tested and God sees fit to permit evil as part of the trial. The concept of **control samples**^{ix} in experimental design helps explain the presence of the inauthentic and the unredeemed. The idea of **double blind**^x helps explain the limited divine intervention.

Due to space limitation, I will focus on articulating my perspective in the main text and leave the brief introductions of the mathematical and theological concepts (marked in **bold**) to the end notes. Suggestions for further readings are found in the footnotes. Whether my conclusions prove persuasive or not, I hope to succeed in showing that mathematical concepts have an informative role to play in theological reflections. My intention is not to rehash the vast amount of literature devoted to the problem of evil, but rather, to highlight a few common sense arguments that could be intuitively persuasive to scientific minded and mathematically versed non-believers. There are big questions in life that call for the integration of the entire spectrum of human knowledge and wisdom. The problem of evil is one of them.

Taken as an argument against the existence of God, the **problem of evil**^{xi} in its deductive form may be stated as follows:

1. There are evil things in the world.
2. God is supposed to be omniscient, omnipotent, and good.
3. If God is unaware of the evil things, he is not omniscient. But if God is omniscient, he is either unable to eliminate the evil things, which implies that he is not omnipotent, or he is unwilling to eliminate the evil things, which implies that he is not good.
4. Therefore, the supposedly omniscient, omnipotent, and good God does not exist.

I echo many who have observed that the problem of evil counts among the biggest intellectual obstacles for people to come to faith, with the qualification that the obstacle seems bigger for people brought up in a monotheistic culture.

If you come across an unbeliever from Europe, chances are, the problem of evil could come up fairly soon in any discussion of religions. Hans Küng called it the rock of atheism.⁸ Writings of many so-

⁸Küng, Hans. *On Being a Christian*, trans. Edward Quinn. (Garden City, New York: Doubleday, 1976), p. 432.

called new atheists testify to that claim.⁹ Leonard Mlodinow recalled movingly the holocaust survival story of his mother in his book “War of the Worldviews: Science vs. Spirituality” co-authored with Depak Chopra.¹⁰ To him and many secular Jews, the memory of holocaust renders the concept of a good and omnipotent God empirically unbelievable because nothing that the Jewish people ever did seems to deserve that savage horror.¹¹

Chinese also suffered tremendously during the second world war. But half a century of communism on top of a traditional culture permeated with Buddhism positioned the average Chinese further down the scale of atheism.¹² I have come to know many Chinese intellectuals who have never in their lives seriously thought about the problem of evil. Sin is a foreign concept for them to begin with. But evil as meaningless chaos? “That's just the way it is!”¹³ Entropy increases monotonically in this universe until it reaches the inevitable fate of heat death.¹⁴ Closer to the present time, an asteroid probably hit the earth 66 million years ago and wiped out the dinosaurs.¹⁵ It could well happen again. Given what we know about complexity theory and butterfly effects, why should anyone be surprised when all the sudden things inexplicably fall apart?¹⁶ All it takes is a neural misfire!

At the other end of the worldview spectrum, I also have south Asian friends who see life's ultimate reality as a perfectly balanced justice maintained by an impersonal transcendental being. They believe that when you do evil, you carry bad karma with you into your next reincarnation.¹⁷ Whatever suffering you have in this life, you earned it in your previous life. As the libertarian in the west would say, “life is what you make it!” You have nobody to blame but yourself. You are your own avatar!

When former atheists and pantheists come to the Christian faith, they bring along certain solutions to the problem of evil. Biblical or not, the solutions are there. In contrast, those raised in a monotheistic culture were often brought up with an image of God resembling a loving grandfather who sits on his armchair to spoil his grandchildren. It is that picture of God which seems most at odd with the existence of evil.

⁹Brown, Neil. "New Atheism and the problem of evil" *Compass*, Summer 2013 Volume 47 Number 1, p. 29-32.

¹⁰Chopra, Deepak and Mlodinow, Leonard. *War of the Worldviews: Science vs. Spirituality*. (New York: Harmony Books, 2011) p. 62-63, 234-235.

¹¹For example, see the blog post of Rabbi Alan Lurie, “How could God have allowed the Holocaust” (http://www.huffingtonpost.com/rabbi-alan-lurie/how-could-god-have-allowe_b_1207672.html)

¹²Chan, C.W. "Good and Evil in Chinese Philosophy" *The Philosopher*, Volume LXXXIV, 1996 (<http://www.the-philosopher.co.uk/good&evil.htm>) Feng, Youlan. *History of Chinese Philosophy*, Volume II. *The Period of Classical Learning (from the Second Century B.C. to the Twentieth Century A.D)*. Trans. Derk Bodde. Ch. XIV Liu Chiu-Yuan, Wang Shou-jen, and Ming Idealism. Part 6, Origin of Evil.

¹³Phil Collins and David Crosby popularized the saying with their 1990 single from the album “... But Seriously,” which features a CD cover of a boy riding a bike away from a bomb explosion, referring to the violence the UK experienced during the the Irish Republican Army conflict.

¹⁴Adams, Fred and Laughlin, Greg. *The Five Ages of the Universe: Inside the Physics of Eternity*. (New York: The Free Press, 1999) p.153-182 describes the last of five ages as the “dark era” where there is heat death and “never-ending annihilation.”

¹⁵Renne, Paul R. et. al. "Time Scales of Critical Events Around the Cretaceous-Paleogene Boundary," *Science*, 8 February 2013, Vol 339, no. 6100 pp. 684-687

¹⁶Mitchell, Melaine. *Complexity: A Guided Tour* (New York: Oxford University Press, 2009), ch. 2 “Dynamics, Chaos, and Prediction,” p. 15-39 identifies three consensus opinions in complex system theory. First, “seemingly random behavior can emerge from deterministic systems, with no external source of randomness”. Second, “the behavior of some simple, deterministic systems can be impossible, even in principle, to predict in the long term, due to sensitive dependence on initial conditions.” Third, “although the detailed behavior of a chaotic system cannot be predicted, ... there are some higher-level aspects of chaotic systems that are indeed predictable.”

¹⁷Reichenbach, Bruce R. (April 1989). "Karma, causation, and divine intervention" *Philosophy East and West* (Hawaii: University of Hawaii Press) 39 (2): 135–149 [145]. doi:10.2307/1399374. Retrieved 2009-12-29. [<http://ccbs.ntu.edu.tw/FULLTEXT/JR-PHIL/reiche2.htm>]

Agnostics with a shopping mall view of religions ask questions about evil in their own ways, too. One victim who died on April 15 was a Chinese graduate student from Boston University. The only child in her family and an outstanding student, she happened to be a statistician and was involved with the international Christian fellowship at the historic Park street church. Among her friends who have no religious affiliations, some would probably ask: why didn't *her* God save her?

The English word “evil” stands apart from words like sin and pain because of its dark and inexplicable quality. Even before 9/11, the popular culture in the USA has been signaling a rising sense of uncertainty about the world in the collective consciousness. I recently did some searches on the IMDB web site for the feature films containing the word “dark” in their titles. From 1980 to 1984, there were 10. From 2010 to 2014, there are 134 including those in production. Counting also the word “darkness” adds 41. The ratio relative to all feature films grew from 0.07% to 0.51%. Counting only those grossing over 1 million dollars, the comparison is 0% and 1.5%.

Feature Films with the the word “Dark” and “Darkness” in the Title

	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14
“Dark”+“Darkness”	10 + 1	17 + 5	32 + 5	35 + 12	29 + 12	71 + 23	134 + 41
Total Features	14707	15949	16365	16534	18517	26179	34605
Ratio	0.07%	0.14%	0.22%	0.28%	0.22%	0.35%	0.51%
Grossing over \$1M	0 in 220	3 in 746	5 in 915	3 in 964	4 in 954	4 in 1047	9 in 591

In finance, institutional investors trade among themselves via opaque exchanges known as dark pools using dark liquidity, with volume surpassing open exchanges. Some have suggested that dark pools and high frequency trading have led to much more frequent emergence of “financial black swans driven by ultrafast machine ecology.”¹⁸

Even scientists are picking up this language fashion. A 2009 Nature article declares that “Dark is the New Black” in cosmology.¹⁹ Cosmologists now estimated that only 4.9% of the universe is made up of ordinary matter, while dark matter and dark energy add up to 95%.

I suppose most people would like to see darkness and evil eliminated, regardless of how they understand those words. Nevertheless, the bible foretells ever escalating magnitude of natural and human caused disasters in the last days (Matt. 24, 2 Thes. 2:9-12, 2 Tim. 3:1-5). Christians must be prepared to give an account for our hope in the midst of evil and sufferings (1 Pet. 3:15).

The Free Will Argument of Open Theism

The continued interest in open theism is a sign of the time. The “dark is the new black” mood of our time strengthens the case of some atheistis and that reality calls for a rational Christian response. To understand open theism, it is helpful to place the free will defense against the problem of evil as its principal premise. The main ideas of open theism can then be worked out as follows:

1. Even though God is omnipotent, God cannot do the logically impossible. Once God gave people free will, God cannot stop people from making bad choices. Hence, God cannot be held responsible for any evil human deeds if people have free will.
2. Because the utmost desire of God is to have people loving him by free choice, God sees a greater good in giving people free will.
3. If God knows the future, the future is objectively determined and free will is a mere illusion.

¹⁸Johnson, Neil et al. “Financial black swans driven by ultrafast machine ecology” arXiv:1202.1448 [physics.soc-ph] (<http://arxiv.org/ftp/arxiv/papers/1202/1202.1448.pdf>)

¹⁹Massey, Richard. “Cosmology: Dark is the New Black.” Nature 461, p. 740-741 (8 October 2009) doi:10.1038/461740a

4. If free will is an illusion, God is responsible for evil.
5. But God is good.
6. Hence, free will cannot possibly be an illusion. Hence, the future cannot possibly be objectively determined. Hence, God cannot possibly know the future.

The first point is a version of the free will defense. Augustine was often recognized as the first major proponent of the free will argument.²⁰ In the 20th century, C. S. Lewis²¹ and Alvin Plantinga²² famously used the free will argument to defend Christianity against atheism.

The second point is often called the greater good argument for free will. There are also other greater good arguments that explain the existence of evil without free will. One only has to think about popular adages like “no pain, no gain” or “pain is the bitter medicine for the soul.” In a later section, I describe another greater good argument known as the soul making defense. Open theists do not necessarily disagree with other greater good arguments. However, they are persuaded that unless the free will argument stands, God is culpable for the evil in the world.²³

The free will defense addresses primarily the how and not the why of evils. Augustine thinks that our mind is created to be rational. Our rationality prevents us from understanding what is irrational. But evil is irrational.²⁴ Trying to understand evil is like trying to see darkness, there is nothing to be seen. Augustine concludes that it is impossible to ask *why* evil happens. We must be content with understanding *how* evil happens. In other words, we can ask “*who did that*” but “*why the person did that*” will remain a mystery in the ultimate sense.

It is worth noting that Augustine modified his view on free will over the years. When he wrote “On Free Choice,” his view is mildly libertarian: God only observes human free choices from eternity and does not control them.²⁵ But only a few years later, Augustine realized that his view of free will leaves a hole even in the how question: if free will is an unknowable cause, does it really describe how things happen? In the end, while he maintains that God cannot be held responsible for evil, Augustine is convinced that no human free choice could be made independent of the sovereignty of God.²⁶

Open theists reckon any determinism as irreconcilable with libertarian free will. Unlike the latter Augustine, most open theists do not further dissect free will beyond a self-originating cause. Their departure from the traditional Arminian understanding of divine foreknowledge could be seen as working out the Arminian understanding of free will more consistently.²⁷ The latter Augustine would probably ask the open theists how they ontologically *ground* the human free decision. In computational terms, wouldn't their libertarian free will necessitate either a kind of impersonal “oracle

²⁰Larrimore, Mark ed. *The Problem of Evil*. (Malden, MA: Blackwell, 2001) ch. 10 “Augustine, City of God” p. 54-61.

²¹Lewis, C. S. *The Problem of Pain*. (New York: Touchstone, 1996)

²²Plantinga, Alvin. *God, Freedom, and Evil*. (Grand Rapids, MI: Eerdmans, 1974)

²³Boyd, Gregory. *Is God to Blame: Beyond Pat Answer to the Problem of Suffering*. (Downer Groves: IVP, 2003), p. 186:

“God sometimes predestines events, but he doesn't predestine individuals. He sometimes uses the evil intentions of people to fulfill his predestined plans, but he doesn't predestine people to have these evil intentions.”

²⁴Augustine, “On Free Will,” 2.20.54: “... We cannot doubt that the movement of the will, that turning away from the Lord God, is sin; but surely we cannot say that God is the author of sin? God, then, will not be the cause of that movement; but what will be its cause? If you ask this, and I answer that I do not know, probably you will be saddened. And yet that would be a true answer. That which is nothing cannot be known.”

²⁵Scott, T. Kermit. *Augustine: His Thoughts in Context*. (Mahwah, NJ: Paulist Press, 1995), p. 158-168.

²⁶*Ibid*, p.169-211.

²⁷Hasker, William. “Foreknowledge and Necessity,” *Faith and Philosophy* 2, no. 2 (April 1985), p.121-157 suggests that “those who seek to maintain the compatibility of free will and foreknowledge are in the end forced to abandon, implicitly if not explicitly, the libertarian conception of freedom,” p. 154. See also: Frame, John. *No Other God* (Phillipsburg, NJ: P&R Publishing, 2001), p. 39-40. Ware, Bruce. *God's Lesser Glory*. (Wheaton, IL: Crossway Books, 2000), p. 31-42.

machine” which is higher than God, or a kind of “kernel functions” for Fate() that is opaque even to God, or both? Following most humanist libertarians, open theists nevertheless seem either unwilling to answer the grounding question or see that as unnecessary.

The strident stand open theism stakes out over free will is remarkable, considering how inconclusive the debate over free will has been among the academic philosophers.²⁸ Even traditional Arminian theologians sympathetic to open theism seem to see wisdom in downplaying the issue of free will by stressing instead the goodness of God.²⁹ But if there is one premise the open theists seem unwilling to give up, it is free will. Hence, a better circumstantial interpretation of their motivation is found in the tactical success they see in Alvin Plantinga – how Plantinga employed the free will defense to defeat the deductive form problem of evil and helped usher in a renaissance of Christian philosophical scholarship.³⁰ Plantinga perceptively identified the concept of free will as a foundational premise that most of his atheist colleagues in the philosophy department would be quite unwilling to surrender. I suppose from the view of an atheist philosopher, an argument against theism cannot really be worth quite as much as the notion of free will, without which personal moral responsibility is difficult to defend.

Ronald Nash recalled a meeting in which Plantinga made the suggestion that natural disasters could conceivably be explained as the works of demons exercising their free wills.³¹ A Jewish rabbi protested at the back of the room in disbelief and questioned if Plantinga expected the audience to believe in a personal devil. Puffing his cigar, Plantinga explained that it does not really matter what one personally believes or even if the suggestion turns out to be true. All he was saying is that such a suggestion is *conceivable* and that is sufficient to defeat the deductive problem of evil. Now, that is what I meant by *tactical!*

However, the success of tactical arguments rest on understanding the assumptions of the people one is talking to. As the sons of this age often say on Wall Street, the nature of fads is that there is always a piling on phase that extends into a long tail, way after a stock attained its fair price. More than a quarter century after the deductive problem of evil declared dead,³² it is at least fair to ask: is the sacred

²⁸Fischer, J. M., Kane, Robert, Pereboom, Derk, Vargas, Manuel. *Four Views on Free Will*. (Malden MA: Blackwell Publishing, 2007), p.1 introduces the subject of free will by pointing out the diversity of opinions: “There are many different ways of thinking about the nature of free will, and there are serious disagreements about what would constitute an adequate theory of free will. Much of the tradition has taken 'free will' to be a kind of power or ability to make decisions of the sort for which one can be morally responsible, but philosophers have also sometimes thought that free will might be required for a range of other things, including moral value, originality, and self-governance. Two other claims often made about free will are hotly disputed among philosophers; and authors of this volume will take different sides on these claims. One is the claim that free will requires 'alternative possibilities' or the power to do otherwise, and the other is the claim that free will requires that we are the 'ultimate sources' of our free actions or the ultimate sources of our wills to perform free actions.”

²⁹Olson, Roger E. “Is Open Theism a Type of Arminianism?” [<http://www.patheos.com/blogs/rogereolson/2012/11/is-open-theism-a-type-of-arminianism/>]

³⁰Clark, Kelly James. “Introduction: The Literature of Confession” in *Philosophers who Believe: The Spiritual Journeys of 11 Leading Thinkers* (Downer Groves, IL: IVP, 1993), p. 10-13 observes that a major factor “in the revival of Christian philosophy was the presentation, publication and subsequent discussion of Plantinga's 'Advice to Christian Philosophers' ... The philosophical and Christian boldness of Plantinga's address engendered an immense flowering of Christian philosophy in the subsequent decade. ... Alvin Plantinga is perhaps best known among philosophers for his penetrating analyses of the problem of evil and the rationality of religious belief. From the time of the Ancients it has been alleged that there is an incompatibility between an omniscient, omnipotent and wholly good God and the fact of evil. Plantinga's free will defense demonstrates that this contradiction is only apparent and that the existence of evil does not logically disprove the existence of God.”

³¹Nash, Ronald. Near the end of lecture record on “The Problem of Evil” in the course of Christian Apologetics from Reformed Theological Seminary at Apple's iTunes U.

³²Mackie, J. L. *The Miracle of Theism*. (Oxford: Clarendon Press, 1982), p.154.

cow of some atheist philosophers of the last century still worth a bigger shrine today?

Divine Providence and Game Theory

Open theists deserve recognitions for their willingness to address the problem of evil. But their denial of divine foreknowledge is beyond the pale of biblical (Num. 23:19, Ps. 33:11, Ps. 139:1-4, Isa. 14:27, Isa. 40:13-14, Isa. 46:10, Rom. 11:33, Heb. 4:13, Heb. 6:17). Their refusal to consider other alternative model of human free agency is disappointing.³³ Many published studies have pointed out all sorts of obvious difficulties when the implications of open theism are logically worked out.³⁴ For example:

- If God does not know the future certainly, how do we understand prophecies that involve the faithful response of God's people? (Heb. 11) Were they compelled? For instance, did John the Baptist respond willingly to become the second Elijah?
- Given libertarian free will, what prevents human beings from sinning again in the new heavens and new earth? (Dan. 12:3, Rom. 8:19-21, 1 Cor. 8:12, 2 Cor. 4:16-18, Rev. 22:3-5)
- Conversely, what is the basis for claiming in the first place that all will sin? (Ps. 51:5, Ps. 58:3, Rom. 3:23, Rom. 5:12, 18-19, 1 Cor. 15:22, Eph. 2:3, 1 Jn. 1:8)

Open theists are aware of these objections and they do try to answer some of them. For instance, Alan Rhoda suggests in a relatively recent article that divine providence is still possible under open theism by appealing to game theory.³⁵ Citing the theory of moves (TOM)³⁶ proposed by Steven Bram, Rhoda suggests that God could structure cycles of rewards and punishments to guide the decisions of people, effecting a degree of divine providence.

His suggestion leaves me perplexed. Without much justification, Rhoda brushes aside the fundamental difference between the idealized rational actor in game theory and the libertarian free will actor in open theism. Think about the classic TV show *Star Trek*. Mr. Spock probably comes close to being an embodiment of the rational actor in game theory. Mr. Spock always tries to maximize the expected utility given all available information. Because of his rationality, an objective omniscient observer who knows all the information available to Mr. Spock ought to be able to predict exactly what Mr. Spock will do in a given situation. However, that is precisely what open theism says cannot be the case for their libertarian free will actor. Captain Kirk is perhaps a better personalization for their libertarian free will actor. Open theists believe that even if God knows everything up to the moment Captain Kirk makes a decision, God still cannot foreknow what Kirk will do with absolute accuracy. That leaves a game theorist no choice but to say that Captain Kirk is less than rational. Unfortunately, without the rational actor premise, game theory simply cannot apply.³⁷

³³For discussion on classical theistic alternatives from Boethius, Aquinas, Ockham, Molina, Frankfurt, see Zagzebski, Linda, "Foreknowledge and human freedom" in Quinn, Philip L. and Taliaferro, Charles ed., *A Companion to Philosophy of Religion*. (Oxford, Blackwell Publishing, 1999), p.291-299.

³⁴Roy, Stephen. *How Much Does God Foreknow: A Comprehensive Biblical Study*. (Downers Grove, IL: IVP, 2006) presents a detailed exegesis of all the key biblical passages. Erickson, Millard. *What Does God Know and When Does He Know It?* (Grand Rapids, MI: Zondervan, 2003) contrasts the open theist and traditional view of divine providence from the biblical, historical, and philosophical perspectives. See also Frame (2001), Ware (2000).

³⁵Rhoda, Alan "Getting Beyond the Chessmaster Analogy: Game Theory and Divine Providence" in Oord, Thomas Jay, ed. *Creation Made Free: Open Theology Engaging Science*. (Eugene, OR: Pickwick Publications, 2009) p. 151-175.

³⁶Brams, Steven. *Theory of Moves*. (Cambridge: Cambridge University Press, 1993). See also: Brams, Steven. *Game Theory and the Humanities: Briding Two Worlds*. (Cambridge, MA, MIT Press, 2011) Idem. *Biblical Games: Game Theory and the Hebrew Bible*. (Cambridge, MA: MIT Press, 2003)

³⁷According to E. Roy Weintraub, all of neoclassical economics rest on three axioms: "1. People have rational preferences among outcomes. 2. Individuals maximize utility and firms maximize profits. 3. People act independently on the basis of full and relevant information." from "Neoclassical Economics" in "the Concise Encyclopedia of Economics" [<http://www.econlib.org/library/Enc1/NeoclassicalEconomics.html>] In other words, rational actors choose the action

Therefore, given his open theism, I fail to see how Rhoda can take game theory to explain divine providence. The rational actor in game theory is objectively deterministic while the libertarian free will actor in open theism is objectively indeterministic. Appealing to game theory as an open theist is a case of having your cake and want to eat it too!

One may suggest that there are ways to fix his argument by re-defining free will and rationality in more compatible terms: a person can be both free and rational. That is exactly my point though. Alternative philosophical models of free human agency do exist. Open theists maintain that divine foreknowledge and human freedom are contradictory (point #3). But all they simply presuppose that as a philosophical definition without any biblical or scientific evidence. One could argue that with TOM, Rhoda demonstrates precisely the possibility of **compatibilism**^{xii}. A rational actor might always choose to accomplish God's good intention even though in the actor's mind, he is acting purely from his selfish interest. That paradox is what Adam Smith meant by the invisible hand.³⁸

It seems that open theists are less concerned about accepting or denying divine foreknowledge as such, more concerned about its consequence for divine culpability (point #4). They worry that any harmonization of divine foreknowledge and human will implies that either God allows evil when he could stop it, or God actively intends evil. But like it or not, the God in the bible does let people sin (Acts 7:42, Rom. 1:24, 26, 28), and does actively inflict pain and suffering for different reasons (Gen. 6:5-7, Gen. 50:20, Job 1-2, Isa. 53, John 9:1-3, 2 Tim. 1:8-12).

As the sons of this age from K Street would likely opine: keeping God in the dark only creates so much *plausible denialability* before making God looks like an aloof and incompetent fool – a God who not only gambles, but blames his loss on the people!

The real sting of evil resides in our present inability to see God's good intention (Rom. 8:28) in the midst of pain and suffering. As Joseph said to his brothers, “You intended to harm me, but God intended it for good to accomplish what is now being done, the saving of many lives.” (Gen. 50:20, NIV) However, Joseph only realized that in the end. The existential incongruity is even more poignantly displayed through the pain of his father (Gen. 37:34-35, 42:36-38, 45:25-28). Still, our present ignorance of God's good intention is not a proof that God has no good intention.

I often wonder if Christians are doing unbelievers a favor by seating them in a jury box and making the “case for God” as if God has hired us as his defense attorney. That is like trying to defend the judge before the criminal. There is only so much case you can make for the existence of light to the born blind. As Plato perceptively lamented, people might even murder you in a cave for insinuating that there is light out there! A case does need to be made, as I will argue in a following section. But it is not the case for God, but rather the case for humanity.

Humanity 2.0 in Googol-part Fugue

Let us examine point #3 in my logical outline of open theism: is it true that divine foreknowledge and human freedom are really necessarily contradictory? To refute that point, we need a counter example, a conceivable scenario where the two compatibly exist.

In 1 Cor. 13:9-10, the Apostle Paul writes, “For we know in part and we prophesy in part, but when completeness comes, what is in part disappears” (NIV). Then, in verse 12, “For now we see in a mirror

yielding the highest utility function value given the information available to them. Knowing all the information available to a rational actor, an objective observer ought to be able to predict exactly what the actor would decide. See also the end note on the rational actor theory.

³⁸Smith, Adam (1759), "Theory of Moral Sentiment", pp. 184–5 in: The Glasgow edition of the Works and Correspondence of Adam Smith, vol. I" (Oxford: Oxford University Press, 1982)

dimly, but then face to face. Now I know in part; then I shall know fully, even as I have been fully known.” (ESV)³⁹

Traditionally, the text has been interpreted to reveal that in the new heavens and new earth, humanity will become perfect in knowledge and wisdom.⁴⁰ Every person will then freely choose what is good and optimal. As a result, everyone knows what to expect. And if even human beings have that kind of foresight, it becomes logically impossible for God to not have perfect foreknowledge himself.

Suppose we think of the new heavens and new earth in abstract as a continuous function that takes the free choice of every person as an independent input variable at each logical moment to compute the state of the next logical moment. And further suppose that the analytical form of the function is made known by God to all. And thirdly, suppose there is a goodness measurement for the state of the universe, call it the “cosmological utility function.” It is only rational for every person, equipped with perfect knowledge, to use one's perfect wisdom to coordinate their inputs so as to maximize the output of the cosmological utility function. No matter how the solution is found, the extreme value theorem guarantees the existence of the maximal and minimal value points if the function is bounded and continuous. To make things perfectly deterministic, all we need is a rule to pick from the equally best.

In terms of game theory, such an eternal reality may be seen as a **non-zero sum cooperative game**^{xiii} where there is a predictable optimal for each move. It is also like a symphony with many players engaging in a *googol-part fugue*: Everyone performs superbly and nobody makes a mistake. The outcome is a perfect harmony.

It is therefore conceivable for divine foreknowledge and human freedom to be both true. All it takes is an imagination of what may be called an open *source* or open *access* God, a God who gives mature humanity all the necessary knowledge and wisdom so that human beings can make the perfect choice in eternity (cf. 1 Cor. 13:11).

When the open theist God looks into the future, all he sees is nothing. When the open source God looks from eternity into what we call the future, he sees his image and likeness working together to bring forth his glory. The open theist God can never quite “rest.” The open source God sits back, relaxes, and enjoys the show on the eternal day of sabbath. The open theists have to bring God down to our epistemological level. The open source God lifts us all up towards his.

A perfect picture of humanity “2.0” might seem incredible in this physical universe. True. Yet, there are biblical and scientific evidences to suggest that the present universe is not meant for eternity, but rather, destined for desolation. Within an error probability of less than 0.4%, latest cosmological evidences suggest that we live in an ever expanding **flat universe**^{xiv} with an omega of 1. The most likely fate of this universe is a heat death or deep freeze.⁴¹ Unless there is complete overhaul of all the

³⁹Note the future indicative middle (deponent) and the aorist indicative passive of the second and the third “know”. “The words bring out the inadequacy of man's present knowledge of God in contrast with God's knowledge of man now and the knowledge of God that man will have in the future.” Rogers, Cleon, jr. & III. *The New Linguistic and Exegetical Key to the Greek New Testament*. (Grand Rapids, MI: Zondervan, 1998), p. 380.

⁴⁰While some cessationists have suggested that the perfection in 1 Cor. 13:8-12 refers to the closure of the scriptural canon at the end of the apostolic age, that has not been the traditional interpretation. McDougall, Donald G. “Cessationism in 1 Cor. 13:8-12” *The Master's Seminary Journal* 14/2 (Fall 2003) p. 177-213. Erickson, Millard J. *Systematic Theology*. (Grand Rapids, MI: Baker Books, 1985) p. 999-1002 sees the end state with perfect and complete knowledge. Grudem, Wayne. *Systematic Theology: An Introduction to Biblical Doctrine*. (Grand Rapids, MI: Zondervan, 2000), p. 1162 draws the distinction between perfection and completeness, suggesting that it is perfect, but not complete. Horton, Michael. *The Christian Faith: A Systematic Theology for Pilgrims on the Way*. (Grand Rapids, MI: Zondervan, 2011), p.697-698 observes the creator-creature distinction drawn by Francis Turretin noting that the understanding of God in the perfect state will be clear and intuitive.

⁴¹Recent measurements from the Wilkinson Microwave Anisotropy Probe (WMAP) are consistent with a flat universe

fine-tuned physical constants, it is fairly inconceivable that this universe could be where humanity will reside eternally. Time, space, matter, and energy could all have different meanings in the universe of the new heavens and new earth.

The **best of all possible worlds**^{xv} argument was originally put forth by Gottfried von Leibniz and is embraced by various Christian rationalists through some versions of divine middle knowledge.⁴² Historically, what Leibniz put forth have been mostly ridiculed, never logically refuted. It is easy to ridicule because this world just doesn't feel like it could be the best possible. However, it may be helpful to reason backward from the eternal end. The best of all possible worlds is more intuitively conceivable if every human being is in the state of perfect freedom, knowledge, and wisdom, which I have argued to be possible in terms of biblical theology. Working backward, if there is a necessary development path for humanity to traverse in order to get to that state of perfection, then every step along that development path could also be said to be the best of all possible worlds for the moment.

Soul Making

Let us probe further into that development path for humanity. One may ask: why couldn't God just place us in that perfect world where we have perfect knowledge and wisdom to begin with? Why save the best for last? To ask it like my children: Why can't we skip the appetizers, the main entrée, and go right to the dessert? To give this question more biblical theological sophistication: If day is “good” (Gen. 1:3) and night is by implication not-as-good, what is the point of having six nights and six days before having an eternal seventh day?⁴³

Before we attempt an answer, it is worth noting that the keyword is “why.” *What is the point of all these?* The problem of evil does not fade away with Christians dancing around the one question that truly matters: the purpose of evil. Describing evil as an inconvenient possibility of libertarian free will, a self-originating cause, is a non-explanatory explanation. At most, it answers how evil happens, it does not address why it happens. It is like saying the Sandy Hook massacre took place because the

theory. NASA, “Will the Universe expand forever?” (http://map.gsfc.nasa.gov/universe/uni_shape.html) See also Adams, Fred and Laughlin, Greg (1999).

⁴²Erickson, Millard J. *Christian Theology*. (Grand Rapids, MI: Baker Books, 1985) p. 356-362 describes a “moderately Calvinistic model” that is “in many ways similar to the argument of Gottfried von Leibniz in his *Theodicy*.” Erickson's proposal may be described as a compatibilist middle knowledge model, and is therefore different from Molinist middle knowledge, Occasionalism, and traditional Arminianism in their incompatibilist view of free will. A common problem with all the middle knowledge models is the lack of direct biblical support. A problem specific to the incompatibilist versions is the so-called “grounding objection” IEP, “Middle Knowledge” (see <http://www.iep.utm.edu/middlekn/>) Without committing to any middle knowledge model *for God*, it is possible to think of a compatibilist middle knowledge model *for humanity*, supposing the perfection of human wisdom and knowledge in eternity. True or not, the mere *conceivability* of sufficient human middle knowledge and perfectly rational choice requires the rejection of the claim that divine foreknowledge and human freedom are necessarily incompatible.

⁴³The poetic literary structure of the Genesis 1 text has been emphatically observed by proponents of the framework interpretation. Blocher, Henri. *In the Beginning: The Opening Chapters of Genesis*. (Downer Groves: Intervarsity, 1984). Wenham, Gordon J. *Genesis 1-15*. (Waco, Texas: Word Books, 1987), p. 39–40. Kline, Meredith. *Kingdom Prologue: Genesis Foundations of a Covenant Worldview*. (Eugene OR: Wipf and Stock, 2006). For an introductory comparison with the literal day and day-age views, see Hagopian, G. et. al. *The Genesis Debate: Three Views on the Days Creation* (Mission Viejo, CA: Crux, 2000). In all three prevailing views of the Genesis 1 account, the significance of the six “nights” and their obvious parallels with the primordial chaotic darkness (*Tohu wa bohu*) is not explored. The framework theory treats the nights as mostly wire frames. The other two views treat the nights as divine recesses, which seems counter-intuitive because of the lack of night on the day of eternal rest. Illuminations from the parallel John ch. 1 text also seem generally lacking in all three views. Without accepting or rejecting the text as literally historical, it seems plausible to see the seventh day as a poetic reference to the eternal day *yet* to come. The father is still at work and so is the son (John 5:17). The evil of the night is still present. But on the eternal seventh day, there will be just day light and no more evil. God can rest and let his creatures do some work for a change!

gunman had a gun. Open theism gives a greater good justification for free will, namely, so that people would love God freely. But that is still not an explanation for evil itself.

John Hick identified two traditions in the way problem of evil is handled: Augustine is representative of the Latin tradition which emphasizes the free will argument. Irenaeus is representative of the Greek tradition which stresses the soul making argument.⁴⁴ The distinction is too simplistic but is helpful nonetheless in contrasting two fairly different perspectives of sin: (a) sin as the result of the lack of will or self control, versus (b) sin as the result of the lack of true knowledge and wisdom. Assuming we can conceive of an eternity where there is perfection of human knowledge and wisdom, the soul making argument could be understood as saying that there are experiences such as humility, faith, hope, compassion, and forgiveness that are possibly obtainable only in the state of imperfect knowledge. And those experiences may be necessary in the maturity of the human soul. For example, without sinning, Jesus experienced the humility of being human (Phil. 2:7 *kenosis*, the emptying of himself) through hunger (Matt. 4:1-2), thirst (John 19:28), sadness (John 11:35), weariness (John 4:5-6), dependency (Luke 23:44-46), and death (Heb 2:14), giving meaning to his compassion (Heb 2:17-18, 4:15). So even though the state of imperfect knowledge and wisdom make people more prone to lapses in judgment because it may seem more “rational” (pleasurable) to sin, there is a greater good for the imperfect state of knowledge.

Kurt Gödel's incompleteness theorems may be applied to illustrate an important idea in the soul making argument. Even if a person has a consistent knowledge set of every true proposition, there will still be propositions in the set which the person cannot prove. Therefore, to have confidence in the veracity of those unprovable propositions, a person must rely on faith. To attain faith, one must come to a place of humility. The state of imperfect knowledge may be necessary in drawing out such humility. For example, the bible portrays sacrificial forgiveness as the greatest love of all (Num. 14:19, Luke 7:47, John 15:13). It is hard to conceive how anyone can experience forgiveness, whether as the forgiver or the one being forgiven, if the world begins in a state of perfection and nobody ever wrongs anyone. The *Felix Culpa* (literally, “happy mistake”) argument says that failures often create the logically necessary conditions for some other experiences.⁴⁵ Wrongs make the experience of forgiveness possible.

In terms of the process of soul making, contemporary thinking in statistical learning, especially with ensemble methods⁴⁶, may help illustrate how the human mind combines competitive perspectives into an intuition that best explains the perceived reality.⁴⁷ Faith and hope could be understood as such fundamental perspectives, or “base learners,” that are matured through interpretation of real life experiences. As a deliberative process that takes place in what could be called the “debate society of the mind,”⁴⁸ these perspectives compete, much like players in a game, in rounds of mental “debate

⁴⁴Hick, John. *Evil and the God of Love* (New York: Harper & Row, 1966)

⁴⁵Helm, Paul. *The Providence of God*. (Downers Grove, IL: InterVarsity Press, 1994) p.213-215

⁴⁶Elder, John and Semi Giovanni. *Ensemble Methods in Data Mining: Improving Accuracy Through Combining Predictions*. (San Rafael, CA: Morgan & Claypool Publishers, 2010) noted that ensemble methods have been “the most influential development in Data Mining and Machine Learning in the past decade.” Elder identifies “importance sampling” as a common strategy in all classic ensemble methods. The synergy between ensemble methods and game theory has been explored by Robert Schapire and Yoav Freund, who themselves discovered boosting, a popular family of ensemble methods. Schapire and Freund see the ensemble classifier and the base classifier as competitors in a repeated online learning game. See Schapire, Robert E. and Freund, Yoav. *Boosting: Foundations and Algorithms*. (Cambridge, MA: MIT Press, 2012)

⁴⁷Kahneman, Daniel. *Thinking Fast and Slow*. (New York, Farrar, Straus and Giroux, 2011) distinguishes two systems in the mind. System 1 is fast and intuitive while system 2 is slow and intentional. The judging audience and debater metaphor may find a certain mapping in the two system view.

⁴⁸Minsky, Marvin. *The Society of Mind*. (New York: Simon & Schuster, 1986) famously explores a society view of the mind

games” until an optimal ensemble opinion is formed that makes the best-fit perspective given the gathered data. That optimum corresponds to the Nash equilibrium in game theory.⁴⁹

There are practical spiritual encouragements that are found in the soul making argument. It reminds us that even in the toils and labors of the present life we are gathering experiences with eternal values (Matt. 6:20, Mark 10:21, Luke 12:33). It gives us the patience to make the most out of the days that are evil (Eph. 5:15-16). At the same time, the soul making argument also correctly focuses our hope in the glory of eternity when faced with adversity (Col. 3:2, Jam. 5:7-8, 1 John 2:15-17). Faith often becomes therapy rather than prophecy when Christians demand our best life *now*. The Christian church often becomes worldly when the otherworldly perspective is set aside.⁵⁰ The soul making perspective helps set our priority straight: we are aliens in this fallen world; a better place is being prepared for us.

Humanity on Trial

Greater good arguments such as the free will defense and the soul making defense are often called theodicy, the defense of God. But the word theodicy is quite misleading because God really doesn't need our defense. The biblical big picture is rather that *humanity is on trial*.⁵¹ God brings glory to himself by demonstrating the worthiness of humanity as his servant to rule over all creation. And God sees fit to permit evils and inflict pain and sufferings in this world as part of the trial.

The trial of humanity could be a necessary step in the development of the collective human soul. An ancient prince often leads his army into battles to earn the respect from his subject before he ascends to the throne. Worthiness is attributed to the lamb that was slain (Rev. 5:2, 4, 9, 12). The prologue in the book of Job reveals Satan's jealousy for Job as the blessed “servant of God,” hinting at the necessity for the demonstration among the heavenly host. The forbidden fruit in the garden (Gen. 2-3), the tests of Abraham (Gen 22), the trials of Joseph (Gen. 37, 39), the sufferings of Job (Job 1-2), the battles fought by Joshua and the judges, the temptations and the passion of Jesus Christ (Matt. 4:1-11, Mark 1:13, Luke 4:1-13, Matt. 26-27, Mark 14-15, Luke 22-23, John 18-19), and the persecutions of the early church (Acts 5:17-18, 8:1-3) are some biblical stories in which God demonstrates the worthiness of his

which consists of many simple member parts that may not seem at all intelligent when each is by itself. The “debate society of mind” view may be seen as a higher level metaphor over Minsky's lower level picture.

⁴⁹Thinking of the deliberative process in terms of a debate “game,” a speech may be seen as a move with the goal of boosting the importance of a subset of the data samples, thereby strengthening the importance of the view held by a debater representing a certain ideological perspective. A debate cycle begins with a previously synthesized hypothesis in the mind of the judging audience. The hypothesis may be tested against any data samples. The debaters would then look for data samples that shine the best light on their views while demonstrating weakness of the current synthesized hypothesis. The debaters will then highlight, or “boost,” certain data in the next debate speech, thus effecting a kind of importance sampling that may add to the weight of their represented view in the next synthesis.

⁵⁰Wells, David. *The Courage to be Protestant: Truth-lovers, Marketers and Emergents in the Postmodern World*. (Grand Rapids, MI: Eerdmans, 2008) summarizes his previous four-volume critique of contemporary evangelicalism by arguing that “it takes no courage to sign up as a Protestant ... to live by the truths of historic Protestantism, however, is an entirely different matter. That takes courage in today's context.” His choice of the word “courage” is very helpful here. If a constructive biblical definition of “free will” can be found, it cannot be in the possibility to oppose God's will. Rather, it ought to be the ability to defy the corrupted norms of the world. The apostle Paul speaks of true freedom among the redeemed. The unredeemed have a rational will, but it is not true freedom, as it is bound to sin. A biblical free will is the non-conformist courage to do what God expects (falls within the bound of God-given freedom) rather than what the worldly norm expects (which is no freedom at all).

⁵¹In May 2011, 20 Nobel laureates representing planet earth put humanity on a trial at the symposium of global sustainability. (<http://newswatch.nationalgeographic.com/2011/05/18/at-stockholm-gathering-of-minds-planet-earth-vs-humanity/>) The idea of putting humanity on trial is nothing new, as science fiction writers have often imagined the trial of humanity with advanced alien civilizations as the jury, like the Q Continuum in *Star Trek: The Next Generation* that decides to put humanity on trial. While Jesus Christ never seemed to present a theodicy, he interceded for mankind in the manner of *anthropodicy*, e.g. “Father, forgive them, for they do not know what they are doing.” (Luke 23:34).

chosen servants to himself and to the heavenly host.

A trial can be seen as a zero-sum game where one side wins and the other side loses. The wager between Satan and God in the prologue of Job could be a microcosm for the trial of all humanity. Apparently, God has so much confidence in Job he practically dared Satan into the betting game (Job 1:8, 2:3).

A trial is ultimately an examination of authenticity and true understanding. Just as a multiple choice question has to contain both right and wrong answers, propositions that are true and false must be present in the state of imperfect knowledge to fashion a fallible trial. In the present age, choosing what is morally wrong may seem pleasurable while choosing what is morally correct may seem painful. That moral dilemma opens up a real possibility of failure because God creates people to rationally seek the pleasurable. And indeed, human failed the very first test. However, the soul making of humanity as a whole is occasioned with successes that do demonstrate the growth of humanity's total understanding of God, accumulating to the cross, which both a trial for Jesus, the representative of the new humanity, and a redemptive act for all creation.

Therefore, the apostle James exhort Christians to consider it pure joy when faced with trials of many kinds (Jam. 1:2). Trials and tribulations are often been blessings in disguise for Christians, resulting in praise, glory, and honor in the end (1 Pet. 1:6-7).

For any trials to be meaningful, there must be control samples. It may be unfair to compare humanity with anything but itself. Hence, God allows the enemy to plant an inauthentic humanity alongside the authentic humanity. The authentic humanity is the chosen eternal bearer of God's image and likeness. The inauthentic is meant to be destroyed at the end. The wheat grows together with the weed; only in maturity are they separated as the authentic humanity will be fully revealed (Matt. 13:24-30). The inauthentic will outnumber the authentic. "Many are called. Few are chosen." (John 6:37, John 15:16, Acts 13:46, 48, Rom. 8:29, 9:1-12, 16, Eph. 1:4)

Scientific experiments involving human subjects are often double blind by design, so that the set up of the control samples is unknown both to the ones being tested and any agents administering the tests. Nobody besides God knows the eternal fate of any individual human being until the person confesses to faith, and even then only God knows with certainty if the confession is authentic (1 Cor. 2:11, Rom. 8:27, 1 Sam.16:7, Luke 16:15, 1 Pet. 3:4, 2 Cor. 10:7, Heb. 4:13). God must limit his intervention in order not to "tip his hand" to Satan and give up the double blind. Hence, the sun shines on both good and bad people (Matt. 5:45). What are Christians to do? "Do not be jealous of evil doers," (Prov. 24:11, 19, Ps. 37:1, 7-8) but rather, "love your enemies." (Matt. 5:44) Even though few are chosen, the members of the authentic humanity is scattered among all nations (Rev. 7:9). Christians must bring the gospel to the ends of the world (Matt. 28:19-20, Mark 16:15-16, Luke 24:46-49).

At the same time, the co-existence of the authentic and the inauthentic means that Christians must always be on guard against false teachings. "Test everything, hold fast what is good." (1 Thes. 5:21, cf. 2 Pet. 3:17, 1 John 4:1-3). Much like the refinery of precious metal in a furnace where the pure will remain and the adulteration will burn away (Matt 8:11-12, Matt. 13:49, 1 Pet. 1-7, 2 Pet. 3:7), in the fullness of time, even the original heavens and earth will burn away (2 Pet. 3:10-13, Rev. 14:11, Rev. 20:10, 15). Only the authentically chosen ones with their experience of humility, faith, hope, and love are worthy of their presence in new heavens and earth (Rev. 21:1, 4). Those who are not worthy follow the fate of the natural course of this desolated universe, which is eternal darkness (Matt. 24).

Summary

The problem of evil presents an intellectual hurdle for many to believe in a good and omnipotent God.

The emergence of open theism could be seen as an apologetic response to lower the hurdle. While well intended, open theism contradicts biblical revelation, not only in its direct claims, but also when its logical implications are worked out. In this essay, I outlined several alternative perspectives to the problem of evil, employing illustrations that may appeal to the scientific minded and mathematically versed non-believers. I hope that my attempt may serve as an encouragement for Christian thinkers to find more creative ways to engage their intellectual gifts in witnessing the gospel.

It is my conviction that any biblical answer to the problem of evil must begin with a high view of humanity in eternity while recognizing its imperfection in the present. Faith is confidence in what we hope for. A low view of God and a bottom-up view of eternal life extrapolating from the present leave us little to hope for. Faith is not a restorative therapy of a paradise lost in this world, but a prophecy about a future perfection in a different world. Authentic humanity is on trial, in a qualifying examination for its glorious role in the eternal day. The deliberation is full of setbacks and pains but it will be over soon. God has a purpose in all these and everything will be revealed to us in the end.

ⁱ**Game Theory** studies the mathematical models of cooperation and conflicts among rational agents. Used in economics, sociology, political science, psychology, and increasingly biological sciences, game theory is also a key cornerstone of the emerging discipline of decision science. John von Neumann co-founded the field of game theory with Oskar Morgenstern in their inaugural treatise “Theory of Games and Economic Behavior.” Besides game theory, Von Neumann was also widely recognized for his work in quantum logic and the Monte Carlo method. He was often credited as the father of modern computer for inventing the Von Neumann (“Princeton”) architecture. John Nash was another key figure in the field of game theory and received a 1994 Nobel prize in economics for his pioneering work. His remarkable life story was popularly retold in the biography “A Beautiful Mind” and the eponymous Oscar-winning movie adaptation. Von Neumann’s minimax theorem has demonstrated constructively that zero-sum games with finite set of actions and rational players result in an equilibrium. Nash showed that an equilibrium also generally exists in any non-cooperative games with finite set of actions and rational players, provided that each player holds accurate beliefs of the strategies used by other players. Game theory rests on the axiom of the utility-maximizing rational actors. The idea of rational actors has been implied in economics since Adam Smith speaks of the “invisible hand” in his “Theory of Moral Sentiment.”

Von Neumann, John and Morgenstern, Oskar. *Theory of Games and Economic Behavior*, 3rd ed. (Princeton, NJ: Princeton University Press, 1944)

Halmos, P.R.. (1973) "The Legend of von Neumann". *The American Mathematical Monthly*: volume 80. p. 382–394.

Nasar, Sylvia (1999). *A Beautiful Mind: A Biography of John Forbes Nash, Jr., Winner of the Nobel Prize in Economics*. (New York: Simon and Schuster, 1994)

Becker, Gary. *The Economic Approach to Human Behavior*. (Chicago: University of Chicago Press, 1976).

ⁱⁱ**Open Theism** is characterized by five basic claims according to David Basinger who writes the introductory chapter in *The Openness of God: A Biblical Challenge to the Traditional Understanding of God*. (Downer Groves, IL: InterVarsity Press, 1994):

1. God not only created this world ex nihilo, but can (and at times does) intervene unilaterally in earthly affairs.
2. God chose to create us with incompatibilistic (libertarian) freedom—freedom over which he cannot exercise total control.
3. God so values freedom—the moral integrity of free creatures and a world in which such integrity is possible—that he does not normally override such freedom, even if he sees that it is producing undesirable results.
4. God always desires our highest good, both individually and corporately, and thus is affected by what happens in our lives.
5. God does not possess exhaustive knowledge of exactly how we will utilize our freedom although he may at times be able to predict with great accuracy the choices we will freely make.

ⁱⁱⁱ**Rational Actor** Theory, also known called the Rational Choice Theory provides a formal model for social and economic behavior of human beings. Rationality is understood as the behavior consistent with a choice that maximizes utility (or pleasure) while minimizing cost (pain) given perfect information. More complex models based on the probability of expected outcomes lead to the closely related Decision theory. Gary Becker was an early proponent of applying rational actor models more widely. Behavioral economics augment the pure rationalistic picture with theories that account for

the apparent irrational behaviors. Some notable ones include the bounded rationality model of Herbert A. Simon, the Allais paradox of Maurice Allais, and the prospect theory of Daniel Kahneman and Amos Tversky. Simon in 1978, Allais in 1988, Becker in 1992, and Kahneman in 2002 received the Nobel prize in economics for their works.

^{iv}**Libertarian Free Will** is the belief that: (1) The existence of alternative possibilities (or the agent's power to do otherwise) is a necessary condition for acting freely. (2) Determinism is not compatible with alternative possibilities (it precludes the power to do otherwise).

Kane, Robert. *The Significance of Free Will*. (New York: Oxford University Press, 1998)

The open theist sees the sovereign predestination of God as a kind of determinism, and is therefore incompatible with libertarian free will. Dualist theological positions, such as Occasionalism, combine a physical/primary/divine determinism and a metaphysical/secondary/human libertarian free will.

^v**New heavens and new earth** (Isa. 65:17, 66:22, 2 Pet. 3:13, Rev. 21:1) is a phrase used throughout this essay to refer to what is commonly referred to as "heaven." The bible says that the present heavens and earth will pass away (2 Pet. 3:10, Matt. 24:35, cf. Mark 13:31, Luke 21:33). Latest cosmology also seems to suggest that this physical universe is indeed uninhabitable in the very long run. The usage of the "heavens" and "earth" does not seem to correspond with the modern cosmological understandings of the outerspace and the planet earth. Ancient readers did not have a picture of a blue marble when they hear the word earth. Therefore, the phrase heavens and earth correspond closer to what some refer to as the spiritual and physical realms. The same distinction may carry over to the new heavens and new earth.

^{vi}**Optimization theory** identifies the nature of functions and the conditions for which optimized input parameters can be efficiently found. It presumes the extreme value theorem which states that if a real-valued function f is continuous in the closed and bounded interval $[a,b]$, then f must attain its maximum and minimum value, each at least once. An implication of the extreme value theorem is that given the analytical form of a function f and unlimited time, it is possible to identify all the points within the interval $[a, b]$ where maximum or minimum values are found.

^{vii}**The Incompleteness theorems** of Kurt Gödel are explained by Stephen Kleene (1967). *Mathematical Logic* (Dover, 2002), p.250 as:

1. Any effectively generated theory capable of expressing elementary arithmetic cannot be both consistent and complete. In particular, for any consistent, effectively generated formal theory that proves certain basic arithmetic truths, there is an arithmetical statement that is true, but not provable in the theory
2. For any formal effectively generated theory T including basic arithmetical truths and also certain truths about formal provability, if T includes a statement of its own consistency then T is inconsistent.

^{viii}**Statistical learning** is a general discipline about data samples based machine learning. While machine learning is often assumed to be a problem that is computationally intractable, there are classes of learning problems where there is a good chance for finding efficient methods to train the learners. The probably approximately correct learning framework (PAC Learning) identifies the conditions for a machine learner to process the samples in polynomial time. Equivalent concepts are found in Vapnik–Chervonenkis dimension (VC dimension) which measures the capacity of a statistical classification algorithm and the Glivenko–Cantelli theorem in probability theory.

Poole, David and Mackworth, Alan. *Artificial Intelligence: Foundations of Computational Agents*. (New York, Cambridge University Press, 2010), p.350ff.

Russell, Stuart and Norvig, Peter. *Artificial Intelligence: A Modern Approach*. (Upper Saddle, NJ: Pearson, 2010), p.714.

^{ix}**Control sample** is used in experiments to compare against the experimental subject sample. The two samples are identical except for the independent variable being tested.

Kerlinger, Fred and Lee, Howard. *Foundations of Behavioral Research*. (Orlando, FL: Harcourt, 2000), p.486ff.

^x**Double-Blind** is an experimental design strategy for tests involving human subjects where the designer seeks to minimize unrecognizable effects due to psychological biases by keeping the control sample setup opaque to both the research administrators and the test subjects. In single-blind experiments, only the subjects are unaware of their control status. In triple-blind experiments, the subjects, the research administrators, and the research evaluators are all unaware of the way the control is set up.

^{xi}**Problem of evil** is stated in deductive (or logical) and inductive (or evidential) forms. William L. Rowe expresses one evidential version this way:

1. There exist instances of intense suffering which an omnipotent, omniscient being could have prevented without thereby losing some greater good or permitting some evil equally bad or worse.
2. An omniscient, wholly good being would prevent the occurrence of any intense suffering it could, unless it could not do so without thereby losing some greater good or permitting some evil equally bad or worse.
3. (Therefore) There does not exist an omnipotent, omniscient, wholly good being.

Another version is expressed by Paul Draper:

1. Gratuitous evils exist.
2. The hypothesis of indifference, i.e., that if there are supernatural beings they are indifferent to gratuitous evils, is a better explanation for (1) than theism.

3. Therefore, evidence prefers that no god, as commonly understood by theists, exists.

- ^{xii} **Compatibilism** is the belief that free will and determinism are compatible ideas. Compatibilists understand free will as the freedom to act according to a person's desire. Therefore, one could be acting freely even when all actions are deterministic. It is necessary to distinguish between physical determinism and divine determinism. Physical compatibilism understands the determinism to be the result of material causality. Divine compatibilism understands the determinism to be in accordance to the predetermined plan of God. A dualist view where an indeterministic physical universe is intervened by a divine determinism is also conceivable. A dualist view may allow some Christians to be divine compatibilist without being a deist.
- ^{xiii} **Cooperative game** is a game where the competition is between coalitions of players rather than individual players. Coordination game is a kind of cooperative game where players arrive at decisions by a deliberative process of consensus building. A non-zero sum game is where the gain does not necessitate the loss of another player. Poole and David (2010), p. 424.
- ^{xiv} **Flat universe** is the cosmological model that seems to best fit the observed data obtained from WMAP measurements. Without the presence of dark energy, a flat universe continues to expand but at a decreasing rate. However, the presence of dark energy makes it more likely that the expansion slows down initially but speeds up again eventually. It means that the flat universe has practically the same fate as an "open" universe, which will end up in heat death or deep freeze. Davies, Paul. *Cosmic Jackpot*. (New York: Houghton Mifflin Company, 2007), p.41
- ^{xv} **The best of all possible worlds** argument comes from Gottfried Leibniz's work in 1704 *Essais de Théodicée sur la bonté de Dieu, la liberté de l'homme et l'origine du mal* (Essays on the Goodness of God, the Freedom of Man and the Origin of Evil). Leibniz suggests that God considered every possible world before choosing to actualize the present one. God chose to actualize this one because it is the best among them all. In his suggestion, Leibniz did not seem to worry about human free will and his view on free will might therefore be called compatibilist. Alvin Plantinga suggests that from a libertarian view of free will, it is conceivable that God might not be able to actualize the best of all possible worlds. Plantinga refers to that possibility as Leibniz's lapse and uses that to account for the existence of evil. This essay uses what can be seen as a mirror opposite suggestion to argue against open theism, namely that, from a compatibilist view of free will, it is conceivable that the perfect and authentic humanity might always freely choose the best of all possible worlds in eternity.

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