Improvising Creation: God, Evolution, and Jazz

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God, it seems, loves jazz. Spontaneity, randomness, and an eclectic mixture of influences collide to create a distinct piece of music that captivates, inspires, and awes. Jazz is a genre, historically, which has been "characterized by continuous change and reinvention" (Goldmark et al. 2012, p. 10). According to legendary jazz musician J.J. Johnson, a fundamental component of Jazz has always been its "restlessness." Jazz, "won't stay put and it never will" (Johnson 2009, p. 250). This unwillingness to remain stationary, or maintain form, is oftentimes embodied musically in the form improvisation, the ability of a jazz musician to play "off the cuff," or to deviate "off course," oftentimes in an unknown or undetermined direction. The same can be said of the Darwinian understanding of nature: Nature is in a constant state of flux, change, adaptation, and evolution, never "staying put" and always changing. If God is in any way responsible for the natural world, then it stands to reason that these random qualities must be an integral aspect of God's creative process. Philosophically and theologically speaking, this seemingly random quality of nature presents problems for the monotheistic traditions of the West. To use the words of Daniel Dennett, "If redesign could be a mindless, algorithmic process of evolution, why couldn't the whole process itself be the product of evolution…*all the way down*?" (Dennett 1995, p. 63). What role, if any, does God play in the natural world?

Generally speaking, Judeo-Christian theology has upheld the belief that God is somehow involved with the natural world, and that some element of teleology or divine planning is exhibited in nature. Teleology is especially pertinent with regards to humanity, particularly when it comes to the origin of human beings and their special status amongst creation. Post-Darwin, the fundamental issue facing the Christian doctrine of creation becomes: how can the seemingly random process of Darwinian evolution be reconciled with the belief that humans occupy some sort of divinely appointed place in nature? What role, if any, does evolution play in God's creative act? If evolution is the means by which God created, as is often claimed, then how exactly does this happen and what does it imply about God's character?

This article presents a historical and philosophical account of evolutionary theology with an emphasis on emergence. Emergence, in this context, refers to the development or origin of meaning within a meaningless system. This subject has its genesis in the late nineteenth century and the responses of two American scientist to Darwinian evolution will be outlined to provide context. First, this paper will outline the response of Asa Gray who, although he was one of Darwin's first supporters, recognized the implications of Darwin's theory for teleology. Second, the attempts by the scientist/theologian Joseph LeConte, who sought to reconcile evolution with creation, will be examined. While LeConte will be analyzed in a particular historical context, his position is generally representative of evolutionary theology. Finally, the latter portion of this paper will culminate in an attempt to draw an analogy between jazz and the doctrine of creation to illuminate the relationship between

God, evolution, and emergence. If Darwinian evolution is to be taken seriously, while simultaneously maintaining some semblance of God as creator, then it becomes necessary to re-evaluate traditional theological assumptions. I propose that the doctrine of creation, post-Darwin, is an aesthetical evaluation of nature, and that Jazz provides an apt analogy that illuminates salient features of the doctrine.

THE PROBLEM

A major point of controversy following the release of Darwin's *Origins of the Species* (1859) was the philosophical and theological implications stemming from the process of natural selection. Especially concerning were the ramifications of Darwinian natural selection on the argument for design, best represented by William Paley in his 1802 magnum opus *Natural Theology or Evidences of the Existence and Attributes of the Deity*. At the heart of Paley's argument was the adamant presupposition that things in nature were created for a specific function, and that the structure of the thing reflected said function. The purpose of the eye, for example, is to see. Paley draws a parallel between machines/tools and organisms, and in this case a parallel between the eye and a telescope: "They are both made upon the same principles; both being adjusted to the laws by which the transmission and refraction of rays of light are regulated" (Paley 1850, p. 391). When one examines a telescope, he or she assumes it has been created to fulfill a certain purpose; likewise, argues Paley, one may infer from this analogy that the eye was created by God for the purpose of seeing. As Michael Ruse points out, Darwin actually accepted the basic assumption of the design argument, "namely that organisms are design like" (Ruse 2001, p. 112). Unlike Paley, Darwin's designer is nature which operates by the mechanism of natural selection, in which there is no premediated plan or teleology, rather than a God who intentionally creates. Natural selection, according to Richard Dawkins, is the "blind, unconscious, automatic process that Darwin discovered," and which "has no purpose in mind" (Dawkins 1986, p. 5). Darwin had effectively removed any form of divine guidance or teleology from nature.

The removal of teleology from nature deeply troubled many of Darwin's contemporaries, including the renowned American botanist and Darwin supporter, Asa Gray (1810-1888). Gray avidly defended Darwin, and yet firmly believed that Darwinian evolution via natural selection was compatible with the existence of a divine designer. Gray admitted that, post-Darwin, natural theology had been fundamentally and irrevocably altered and that "design can never be demonstrated" as it had been done historically, a la William Paley and the watchmaker analogy (Gray 1877, p. 70). Nevertheless, he continued, the "presumption of a [designer]" may be inferred from nature in "arrangements which strike us as adaptive or intended to produce a certain result" (ibid). In other words, to use the example of the eye, while each step in the process of the eye's formation is explainable in exclusively naturalistic language, the end result, the completely formed and functional eye, is nothing short of miraculous. The proliferation of accumulated natural examples of this kind provided a sort of general inductive argument and served as and provided a "conviction which practically we are unable to resist" (Gray 1877, p. 71). Gray's argument rests on the supposition that God performed the original creating act, and that in evolution the "impulse which [results] in the variety or new form was given at a point beyond observation," i.e. God (Gray 1877, p. 75). In other words, God physically manipulates the variation that is the driving force behind evolution in order to achieve a teleological end. Consequently, a particular end result of the evolutionary process, such as the eye, is evidence of God and divine intervention into the natural world.

In addition to his understanding of divine guidance to achieve variation, Gray believed that God directly intervened in creation at certain points. As a general rule, Gray claims that "the whole inquiry transcends its powers only when all endeavors have failed" (Gray 1877, p. 95). In other words, an appeal to divine intervention is only justified when all other scientific explanations are exhausted. As Darwin himself noted, in this very important respect, Gray "does not by any means go all the way with me" (Darwin 1993, p. 303). However, while Darwin may be perturbed by Gray's insistence on divine intervention, he himself is to blame. In a notorious passage from his 1860 version of the *Origins,* Darwin states that "probably all the organic beings which have ever lived on this earth have descended from some one primordial form, into which life was first breathed by the creator" (Darwin 1860, p. 484). Gray, in line with Darwin, limits special creation to inexplicable moments in evolutionary history, namely the creation of organic life and the creation of humans. To use the words of Gray, "There seems a great likelihood that one special origination should be followed by another upon fitting occasion (such as the introduction of man)" (Gray 1877, p. 95). Yet, by his own criteria, Gray leaves open the possibility that an adequate scientific explanation for the origins of modern humans from lower life forms is possible; and, if such an

explanation is provided, this special instance of creation must be abandoned. While Gray is open to the possibility of future scientific explanations concerning the origins of humanity, the reluctance is clear. If such an explanation were possible, then the traditional understanding of God as "creator" would be lost or, at the very least, in serious need of re-evaluation.

THE SOLUTION

Joseph LeConte (1823-1901) was a nineteenth century southern scientist and one of the first Americans to write a systematic account of the relation between Darwinian evolution and Christian theology. LeConte began his theological journey adopting a typical "day-age" interpretation of Genesis, which "makes the creative days great periods of time," in order to accommodate modern geology (LeConte 1880, p. 262).[1] Nevertheless, after reading Darwin's *Origins* LeConte became a died in the wool Darwinian, applying Darwinian principles, not only to his scientific research, but also to his complete restructuring of theology. LeConte expresses the gravity of accepting Darwin's claims by stating that evolution "determines the whole attitude of the mind toward nature and God" (LeConte 1888, p. 4). Due to his symbolic interpretation of Genesis, and his full acceptance of scientific laws, LeConte was faced with a conundrum: "Either God operates Nature in a far more direct way than we are accustomed to think, or else nature operates itself" (LeConte 1880, p. 27). In other words, either God acts even more closely with the natural world than previously believed by traditional Christian theology, or God does not act.[2] In the early Church, the doctrine of creation was more so a statement of *who* God is, rather than an explicit explanation about *how* God created (McGrath 2001, p. 300). Nevertheless, the doctrine of creation undergoes a fundamental transformation with the advent of the scientific revolution in the fifteenth century. Beginning with Copernicus, and culminating with Newton, the universe becomes increasingly intelligible and knowable through its mathematical properties. Furthermore, the need to appeal to divine action to understand natural phenomenon became less necessary and subsequently, as Thomas Kuhn explains, "the belief in miracles declined, for miracles were a suspension of mechanical law and a direct intervention by God and his angels in terrestrial affairs" (Kuhn 1957, p. 263). Increasingly in the seventeenth and eighteenth centuries, God's direct and physical actions in the world are regulated to creation, the creation of the universe and the creation of life/humanity. As LeConte laments, Newtonian science "pushed [God] further and further away from us until…now finally Evolution finishes the matter, and pushes Him entirely out of sight" (LeConte 1880, p. 28).

In order to resolve this problem, LeConte insists on reconciliation between God's direct agency and natural law; thereby reformulating the modern doctrine of creation. LeConte advocates a return to the "old ideas of direct agency" which lead to a new understanding of God's relationship with the physical universe by postulating a "God not far away and beyond our reach, standing outside of, and above Nature," but rather, a God who is "within" nature (ibid). Furthermore, LeConte states that God "is immanent, indwelling, resident in nature...in every molecule and atom, and directly determining every phenomenon and every event" (LeConte 1888, p. 297). LeConte walks the fine line between pantheism and panentheism in his attempt to retain God's action in the material world while simultaneously emphasizing God's ontological distinction from physical reality. LeConte presents a God who acts from *within* and whose regular actions are synonymous with natural law. Accordingly, there is no need for divine intervention because God neither exists nor acts outside of natural processes.

LeConte never posits divine intervention, but rather suggests that God works through the natural process of evolution while concurrently maintaining that human beings are theologically significant. Unlike previous theologians however, LeConte claims this significance evolves, or rather, *emerges* from nature. Humanity's significance lies in its consciousness, and God, according to LeConte, "is revealed only in consciousness" (LeConte 1878, p.778). Although LeConte argues that the origins of consciousness is explainable naturalistically, he nevertheless upholds a fundamental distinction between inert matter and consciousness claiming that "the two sets of phenomena belong to different orders…so different that it is impossible to construe the one in terms of the other" (LeConte 1878, p. 790). Consciousness emerges from lifeless materialistic mechanisms but cannot be reduced to these processes. For LeConte, this signifies that there is indeed something unique about humanity and humanity's place in nature.

Concerning the organic evolution of humanity, LeConte affirmed a completely naturalistic process of human evolution; that is to say, LeConte never evoked special creation or divine intervention in the evolutionary history of humanity. LeConte believed that he was able to avoid the problem of divine intervention and teleology because in the

process of organic evolution, "we find a gradual process of development headward, brainward...[we] find increasing dominance of higher over lower" (LeConte 1888, p. 171). Evolution is geared toward intelligence, not because God is pushing it toward that direction, but rather because it is built into the mechanism itself. LeConte's basic assumption, one that seemed to be biologically coherent at the time, was that intelligent life forms were notably higher on the evolutionary scale. Thus, human intelligence and consciousness are the result of adaptive traits that emerged out of the evolutionary process, due to the fact that these traits offer tremendous evolutionary advantages. In other words, there are no specific instances in the evolutionary timetable in which God intervenes into the process to "guide" or "direct" it towards a particular goal; nevertheless, the process itself is geared toward human life, utilizing purely naturalistic means and therefore retaining a sense of purpose.

THE ANALOGY OF JAZZ

Presently, while creationism may indeed still be a live hypothesis for many believers, it is at best scientifically untenable and at worst antithetical to science as a discipline.[3] Subsequently, if the doctrine of creation is to remain a viable option for believers in light of evolution, then its prescientific definition must be accepted. Since there is no credence in speaking of God's direct physical intervention in the creation of biological organisms, the theologian must do so metaphorically and often times by way of analogy. An apt analogy, particularly as it pertains to understanding God's role in creation, is Jazz. In this analogy God is a jazz musician, and God's creative act is most akin to an improvised solo. This analogy will serve as a stark departure from, and an illuminating juxtaposition to, the early nineteenth century conception of God, the watchmaker.

Improvisation is a controversial subject in jazz literature, and its precise nature is still disputed.[4] Nevertheless, spontaneity in the form of an improvised solo remains deeply connected to jazz and, historically speaking, it may be said that "jazz is an improvisatory tradition" (Kania 2011, p. 395). Contrary to its use in the vernacular, improvisation does not entail that the musician is "making it up," or simply creating notes and beats ex nihilo. Ornette Coleman, jazz musician, composer, and one of the fathers of free jazz, explains the concept of improvisation in a 1997 interview with the French philosopher Jacques Derrida. Coleman explains, "When I was doing free jazz most people thought that I just picked up my saxophone and played…without following any rule, but that wasn't true" (Coleman 1997, p. 320). Using the example of a song he wrote, Coleman explains that deviating from the sheet music in jazz is the individual musician's interpretation of the piece. Jazz, as Langston Hughes described it, is a form of "communication." "Jazz is a heartbeat," (Hughes 2002, p. 369) and the musician speaks his/her heart to the audience via music. Colman goes on to explain that in the act of improvisation "the musicians are trying to reassemble an emotional or intellectual puzzle," and that this puzzle is given "tone" through their respective instruments (Coleman 1997, p. 322). In other words, the musician is given a piece of music which they interpret, and the interpretative act of transforming the written piece into meaningful notes lies at the heart of improvisation.

While there is undoubtedly a structured component to jazz, insofar as the musician is not playing random notes, there is an element of the improvised act that is arguably unscripted. As the physicist/jazz musician Stephon Alexander explains, "Improvision is an in-the-act-moment," and the spontaneity of the improvised act comes from the musicians' interpretation of the piece at that particular time (Alexander 2016, p. 62). On this point there is considerable overlap between jazz, philosophy, and theology, specifically when it comes to the issue of "forced choice" and its close philosophical counter part of "bad faith" found in the writing of Jean Paul Sartre (Brown 2000, p. 114).

In *Being and Nothingness,* Sartre distinguishes between the "popular" concept of freedom defined as "obtain[ing] what one has wished," and the philosophical concept of freedom defined as "determine[ing] oneself to wish (in the broad sense of choosing)" (Sartre 1956, p. 621). The distinction is important, according to Sartre, because one is free regardless of the outcome; that is to say, one is free regardless of whether or not one obtains the object or outcome of one's desire. Freedom lies in the volition of the individual, the act of "choosing" itself. For example, consider a recent high school graduate who has decided to pursue a college education. Sartre claims that the freedom of the individual lies not in the outcome, whether or not the individual is accepted into college, but rather in their ability to make the decision in the first place. However, this freedom is not always perceived as a good thing by humans. As Sartre famously says in *Being and Nothingness,* "Man is condemned to be free." Freedom carries negative implications, i.e. we are "condemned," because of the responsibility it implies, and man is "responsible for everything he does" (Sartre 1989, p. 350). Humans don't want to be free, that is, free

with respect to our actions or beliefs. As the Inquisitor says in Fyodor Dostoyevsky's *The Brothers Karamazov*:

> Thou wouldst go into the world, and art going with empty hands, with some promise of freedom which men in their simplicity and their natural unruliness cannot even understand, which they fear and dread—for nothing has ever been more insupportable for a man and a human society than freedom (Dostoyevsky 2009, p. 197).

Since humans don't want to be free we impose self-limiting restrictions on our actions, what Sartre calls "bad faith." Bad faith is a type of psychological determinism which "determines the way the world and the people within it appear, shaping all our thoughts and actions as agents in the world" (Elwyn 2012, p. 601). Bad faith can be understood as a type of "self-deception" in which an individual knowingly, or unknowingly, limits his or her freedom (Heldt 2009, p. 54). Returning to the previous example, suppose that our high school graduate is rejected from her dream school. She would be acting in bad faith if, upon rejection, she concluded that college was not an option and subsequently gave up her pursuit. Bad faith serves as something "to take refuge in, as the ideal toward which we can flee to escape anguish" (Sartre 1956, p. 40). Psychological determinism is a facade designed to mask the heinous anxiety bubbling just beneath the surface of our actions. Our graduate might convince herself that college is no longer an option in order to escape the anxiety of conducting further research, retaking entrance exams, or simply waiting another year. Thus, a truly free act is one laden with anxiety. However, this is not to suggest that humans are completely free. We are limited in our freedom by our historical, social, and economic status. To use the words of Matthew Eshleman, Sarterean freedom "finds its limits in the freedom of Others" (Eshleman 2008, p. 4).

The Jazz musician faces the dilemma of Sarterean freedom when playing a solo. The musician's freedom is limited by the particular "head"[5] the band has decided to play. In order for the song to be audibly coherent the band must stick to this standard rhythm, melody, etc. until it is time for the solo where the improvisation takes place. Here the Jazz musician faces freedom. The musician is forced to make a choice, to "lead" the band down a particular audio path, a path which will hopefully lead back to the original head. This distinction lies at the heart of the difference between improvisation and composition. The soloist does not have the luxury of time; he or she must "plunge ahead and do something" (Brown 2014, p. 64). In this sense, a traditional musical composition may be understood as an example of bad faith. Limitations are placed on the musician, he or she is forced to play a particular song in a particular way with little or no deviation. The musician's freedom is hinged, due to arbitrarily imposed self-limitations. Contrariwise, the improvised solo creates space for freedom, room for the musician to explore. Yet, as Sartre makes clear, this freedom comes at a cost. There is little "risk" involved in performing a standard music composition, aside from failing to meet the technical proficiencies. However, as will be demonstrated below, there is considerable risk in the improvised act.

Music historian Ted Gioia regards improvisation in jazz as a "retrospective model." Due to the spontaneity of the jazz solo there is no standard blueprint the musician can follow, but this does not somehow mean that the solo is formless or auditorily meaningless. As Gioia (1992, p. 63) explains:

> The improviser may be unable to look ahead at what he is going to play, but he can look behind at what he has just played; thus each new musical phrase can be shaped with relation to what has gone before. He creates his form *retrospectively*.

Here lies the crux of the analogy. The aesthetical form of the improvised solo *emerges* out of the spontaneity of the performance. The solo may have an end goal, to merge back into the head, but there is no predetermined path, no blueprint, the musician can follow to get to the end. Nevertheless, the song must go on, the musician has to play and plunge forward. The musician makes one anxiety laced decision after another and must be fully conscious of the fact that failure is a sustentative and ever-present reality. The aesthetical quality of the performance is only knowable retrospectively, after the musician has arrived, or not arrived, at the desired goal.

Yet, how do we makes sense of this retrospective aesthetical judgment? At this point the analogy begins to break down, for the song may be said to have purpose/intent in its basic structure even if room is made for improvising. The same cannot be said of Darwinian evolution. Nevertheless, it remains feasible to speak of the doctrine of creation as an aesthetic judgement if we do so in Kantian terms. Kant, in his *Critique of Judgement,* discusses the possibility of teleology with respect to nature. Organisms in nature do contain a teleological end or purpose insofar as evolution "selects"

certain traits for survival and, as Kant notes, it may be said "that a thing exists as a natural end if it is (though in a double sense) both cause and effect of itself" (Kant 2007, p. 199). In other words, nature may have a purpose, but the reason or cause for this purpose lies within itself and not some supernatural agent. Although seemingly paradoxical, organisms contain their own end or purpose. As mentioned above, the purpose/function of the eye is to see. So we as humans perceive nature as "acting" according to particular ends, and yet this teleological assumption has no objective basis.6 Nevertheless, these teleological assumptions are useful for making generalizations about nature. As Kant says, science often conceives of a "unity of nature in accordance with empirical laws," and that these laws must "necessarily be presupposed and assumed, for otherwise no thoroughgoing interconnection of empirical cognitions into a whole of experience would take place" (Kant 2007, p. 214).

While these teleological assumptions may have no objective reality in nature per say, Kant notes that they nevertheless contain a *transcendental* quality. This perceived purposiveness of nature contains a subjective quality to it as well because, as Manfred Baum notes, it "rests on the transposition of human rationality of action to the effects of nature" (Baum 2013, p. 27). Humans transpose rationality into nature and hence it becomes possible to read *purpose* into a *purposeless* system. This, according to Kant, makes aesthetical judgement possible. As Ryan Johnson explains, "The aesthetic part, rather, occurs in the judgement of the relation between the subject and the object" (Johnson 2011, p. 118). Aesthetical judgements, therefore, have a subjective as well as an objective element to them: aesthetical judgements deal with the relationship between the subject, the human who is transposing their rationality, and an object, a thing existing in the external world independent of that rationality. One appreciates the beauty of a painting, or piece of music, due to the *feeling* that it gives the individual. The same may be said of nature. Aesthetic pleasure from nature is, scientifically speaking, typically derived from some sense of "systematicity" or ability to be quantified (Deligiorgi 2014, p. 27).

Back to the analogy, the doctrine of creation may be viewed, in light of evolution, as an aesthetical judgement on God's symbolic solo. According to Kant, it is aesthetically possible to read purpose into purposeless nature, due to the transcendental nature of human reason. The doctrine of creation becomes a positive affirmation of nature's purposefulness without interjecting a God of the gaps. Going back to Gioia, the improvised piece is judged retrospectively. After the solo is complete, the astute listener determines the success or failure of the musician. Did the risk pay off? Was the musician able to return to the head? Was the song auditorily coherent? The answer to these questions, and more, constitute the judgement of the listener. The same may be said of God's creative act. Its meaning emerges out of the purely material process of Darwinian evolution. Furthermore, the creative act carries the same sort of risk as the improvised solo. God runs the risk of failing and, if the fossil record is any indication, God has failed, millions of millions of times. Taken at face value, there is nothing blatantly beautiful about nature red tooth and claw, but interpreted retrospectivity it begins to take on form, beauty, and meaning. It seems the doctrine of creation post Darwin has taken on new meaning, yet remains just as bold in its claims about reality and God. There is no longer any divine intervention, no preordained tinkering with the biological mechanisms that created life. Nevertheless, there remains the positive affirmation of meaning and purpose. The claim that human existence cannot be reduced to the cold and indifferent processes of nature. It is to look at nature, and our place in it, as beautiful.

Darwinian evolution may have a form or process in natural selection, but this process is random and devoid of any inbuilt or foreordained teleology. God may have a head or chorus in mind as an endpoint, but it must be conceded that this end goal may never be reached. God is in the same boat as the improviser insofar as God must act, plunge forward, and create. At this point the divine and human condition share a striking similarity insofar as we both bear the burden of freedom and face anxiety laced choices. God, like humanity, is condemned to freedom. There is no guarantee of humanity, or even of an intelligence that might be able to acknowledge its creator, and yet the creative process of evolution churns out beings at an unfathomable rate, bringing into existence millions of creatures only to take millions more out of existence. And yet, in spite of the odds, humanity exists. This being the case, it becomes possible for the individual to look back at humanity's sordid evolution with awe and to affirm its inherent purpose.

NOTES

1 I call this view "typical" because it was a widely held position by the mid nineteenth century, see Ronald Numbers 2006).

2 The word *traditional* here must be interpreted loosely. Historically, the doctrine of creation has had many rich and robust articulations. Nevertheless, what is meant by "traditional" in this context refers to the relationship between God and the world (universe) that emerges with the scientific revolution in the fifteenth century. God is often understood as existing *outside* the physical universe, yet nevertheless periodically intervening *in* the universe and human affairs. God is the originator and maintainer of natural law who alone holds the power to circumnavigate said laws, i.e. miracles. God, in this sense, acts from without and intervening when necessary. It is this conception of God that LeConte is reacting against.

3 Based on the testimony of historian and philosopher of science Michael Ruse, it was ruled in the 1981 case *McLean v. Arkansas Board of Education* that Creationism did not meet the basic criteria of being a science. For a detailed explanation of why creationism/intelligent design is not scientifically tenable see Miller 1999.

4 For an outline of the debate, see Brown 2014.

5 A head, in jazz terminology, is a set melody consisting of several courses. The basic structure of a jazz song typically consist of the following: Head (chorus), Solo (where the improvising takes place), and head. For an explanation of terms see http://www.jazzinamerica.org/lessonplan/8/2/203

6 At the very least, it may be said that there is no widely acknowledged objective basis for teleology in biology. However, the complete rejection of teleological thinking is not a given; for example, in his *The Paradox of Evolution: The Strange Relationship between Natural Selection and Reproduction* physiologist Stephen Rothman argues for the legitimacy of naturalistic teleology.

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