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Wandering through "Wonderland": Lewis Carroll's Life as a Logician, Author, and Man of God

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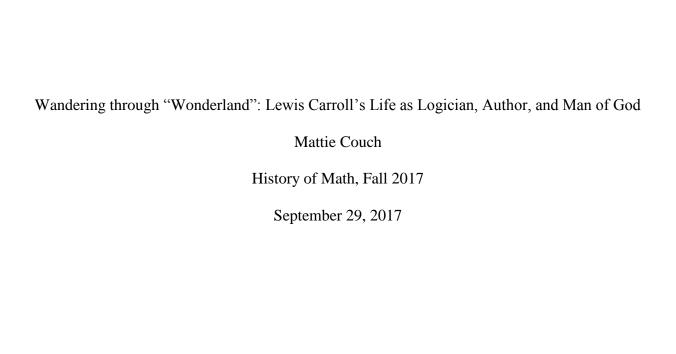Follow this and additional works at: http://scholarlycommons.obu.edu/math

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Abstract

Charles Dodgson, better known as Lewis Carroll, lived his life as a man of God, a skilled

logician, and a masterful author. Much can be learned through a study of his life and his

successes. Tracing his early years, his studies, and his accomplishments, while recognizing the

accolades and admonitions of his contemporaries, reveals much about the influences on

Dodgson's life. To separate his faith from his work is impossible and speaks to the precedence

his beliefs held over all of his other ambitions.

Charles Lutwidge Dodgson, referred to in public circles by his pseudonym, Lewis Carroll, was born January 27, 1832 as the third child in an uncommonly large family of eleven children, all of whom lived into adulthood[1]. Born near Cheshire to a pastor and his wife, Dodgson remained in the family home and was educated by his mother until he was twelve years old. One would contend that he began setting himself apart as an unusually bright child from a very young age, as evidenced by the fact that Dodgson began reading *Pilgrim's Progress* at seven (Leach).

When he was twelve, he transitioned from home-schooling to a private school. Later, he began attending a Rugby school, about which he said, "'I cannot say … that any earthly considerations would induce me to go through my three years again … I can honestly say that if I could have been … secure from annoyance at night, the hardships of the daily life would have been comparative trifles to bears'" (Leach). While Dodgson did not seem to enjoy his school years there, he performed very well. In fact, the dean of the math department claimed he was the most brilliant student he had seen (Leach).

After he completed what would be the equivalent of a high school education, Dodgson began school at Oxford. In 1854, he earned his B.A. in mathematics and went on to graduate with an M.A. in 1877. Additionally, he served as key math lecturer at Christchurch in Oxford and continued in that position for 26 years. Dodgson never married; instead he lived a life of literature and logic (Weaver 116-117).

This journey began while Dodgson was still a student at Oxford. He was given a fellowship for his work, barring that he never married and pursued a devout, holy life. Those who taught him, including Bartholomew Price, viewed him as an intelligent man (Pycior 161).

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[1] During this time, many children did not live past infancy (Leach).

Under the tutelage of Price, Dodgson grew in his understanding of calculus, though some accounts still hold that he was incapable of comprehending even the most fundamental concepts such as limits (Weaver 120). Together, they also spent time exploring the ideas of symbolical algebra.[2] To this notion, Dodgson scoffed. In his mind, math was built on axioms and to deviate from them would be the greatest crime. Because of this, Dodgson was never able to comprehend some of the more intensive theorems concerning that branch of mathematics (Pycior 160-161).

A common theme within Dodgson's mathematical career surfaced, a theme that centered on avoiding concepts he did not understand or felt were illogical. While Dodgson was highly independent in his mathematical pursuits, he drew off of the work of DeMorgan, especially in the way that he posited logical arguments (Pycior 159). Similar to DeMorgan's conservative approach to mathematics, Dodgson felt as though the preservation of past mathematical accomplishments should be the aim of any mathematician (Weaver 118). Take, for instance, Dodgson's seeming idolization of Euclid. In the eyes of Dodgson, no person could improve the work that Euclid had done in the past, and to even think of exploring non-Euclidean geometry would be the greatest offense (Weaver 118).

Courtesy of Dodgson's desire to remain in the past and inability to understand certain concepts, most of Dodgson's contemporaries did not look fondly on his mathematical achievements. And, in fact, some would have said that he had a limited mathematical mind. For example, in one of his many logic puzzles, he describes the probability of pulling a particular ball out of a bag, yet begins his solution with a faulty assumption (Weaver 119). Additionally, Dodgson's narrow understanding of limits was evident in his marginalia: " ' The notion that because a variable magnitude can be proved as nearly equal to a fixed one as we please, it is

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[2] Symbolical algebra, simply put, is the study of how to apply algebraic concepts. For example, one form of symbolical algebra considers applying multiplication to lines (Pycior 161).

therefore equal, is to my mind unsatisfactory, as we only reduce the difference, and never annihilate it' " (Weaver 120). An additional note found in Dodgson's writing implied that he could not fathom how $2(x^2 + y^2)$ equaled $(x + y)^2 + (x - y)^2$, something that one with basic mathematical training should understand (Weaver 120). His notes both on limits and on equations were just one of many moments of confusion to be found within his pages of mathematical musings.

While not a notable mathematician, Dodgson was an accomplished logician and author. However, not all of his written work is well-known. At the time of his death, Dodgson had published 256 works and written around 900 (Weaver 117). Interestingly, one of the ten logic books that Dodgson wrote, *Pillow Problems,* resulted from his chronic insomnia (Weaver 118). In one comment concerning why he wrote *Pillow Problems,* he explained that

> mathematical thinking… [w]as a remedy for "skeptical thoughts, which seem for the moment to uproot the firmest faith ... blasphemous thoughts, which dart unbidden into the most reverent souls ... unholy thoughts which torture with their hateful presence the fancy that would fain be pure" (Weaver 118).

These thoughts that Dodgson describes were thoughts that surfaced as a result of being awake during the darkest moments of the evening. In order not to fall into the trap of doubt, Dodgson would contemplate seemingly basic mathematical problems, but without the use of pen or paper.

This book, *Pillow Problems*, was comprised of 72 problems primarily in the fields of algebra, plane geometry, and trigonometry (Weaver 118). For the amusement of the reader, consider two problems as found in Dodgson's clever book: "Inscribe in a given Circle the maximum Tetragon having 2 parallel sides, one double the other…If *a, b* be two numbers prime to each other, a value may be found for *n* which will make $(a^n - 1)$ a multiple of *b*" (Carroll, *Pillow Problems* 8,10).

At the first, these problems may not seem complex, but upon closer consideration, the appreciation for his mathematical and logical mind deepens. In fact, Braithwaite, another accomplished logician from Britain, describes Carroll's wit and logic favorably and keenly: "His mind was permeated by an admirable logic which he was unable to bring to full consciousness and explicit criticism. It is this that makes his symbolic logic so superficial… and his casual puzzles so profound" (Weaver 124). Given that Dodgson's inspiration for the work came from lying awake, dreaming up logical riddles, solving them only using his mind, and scribbling the final solutions the following morning, one cannot help but be astonished at his intelligence. It is only in his indirect way of applying logic that he receives these accolades.

Even though Dodgson was a logician in his own right, his artfully crafted, yet obscure literature aids one's appreciation for his logical capabilities. One such example surfaces after examining a conversation between the Mad Hatter and Alice:

> In the tea party scene, the March Hare offers Alice 'more tea.' Alice replies that she has 'had nothing yet [and] so ... can't take more.' This provides the opportunity for the Hatter's comment: 'You mean you can't take less ... it's very easy to take more than nothing' (Pycior 164).

Not only does Dodgson masterfully cause the reader to feel baffled because of the wit exchanged by the characters, he also discretely, or perhaps not very discretely at all, introduces the meaning of negative numbers. Where this particular example concerns negative numbers, there are other portions of his literature that relate to other mathematical concepts and the implications those hold in reality.

Contemplating those implications through the story of Alice demonstrated Dodgson's inner turmoil. The use of logic within his literature still remains impressive and well-executed, though confusing to a mind which is not logically inclined. Pycior so elegantly concludes her essay with insightful parallels between the lives of Alice and Dodgson: where Alice wandered

through Wonderland and sought meaning in all, Dodgson contemplated a mathematical world he had never breached before. To this end, Alice ultimately came to an understanding of the bizarre world she was in, but Dodgson was unable to reconcile the disparities within him. As the "themes and techniques [of his mathematics] … found an outlet in his fantasy writings," one cannot help but wonder if this exposé resulted from Dodgson attempting to live vicariously through the life and adventures of Alice (Pycior 170). Those things, which to a greater mathematical mind may have made greater sense, undoubtedly left Dodgson confused and in need of a place to sort them out. That place became his literature.

Dodgson's bent towards overcoming the doubt and confusion that existed within his scholastic life, creeping in during bouts of insomnia, inclines one to investigate the source of his faith. Having been born into a family that was extremely devout, as seen through the three generations of ministers that preceded his birth, it comes as no surprise that Dodgson maintained this same faith (Leach). According to a letter Dodgson wrote around 1882, he holds "that Christ died to save us, that we have no other way of salvation open to us but through His death, and that it is by faith in Him, and through no merit of ours, that we are reconciled to God... 'I owe all to Him who loved me, and died on the cross of Calvary' " (Carroll, *Letters* 118).

Contrary to his family's expectation Dodgson chose not to be ordained as a minister. However, he did become ordained as a deacon in 1861. While his reason for not becoming a minister is slightly ambiguous, he does say that he never wished to further the progression of a ritualistic faith. He felt that the church as a whole was incredibly divisive, and for that, he never wished to become a minister of it (Carroll, *Letters* 118).

Though he did not become a minister, he lived his life in a way that spoke to the faith he held, a faith that was a product of his family's upbringing and his own personal choice later in

life. Of Dodgson, one of his students spoke and said that there was an air of dignity about him: "punctiliousness, courteous, considerate, so scrupulous never to embarrass or offend, that he made me feel I counted" (Lawrence 814). One cannot help but think that his beliefs influenced the way that he conducted himself, especially within the classroom setting.

The natural consequence of Dodgson's unshakable faith and insightful mind lent itself to a contemplation on the intersection of his work and his faith. As Karen Prior of *The Washington Post* writes, "Dodgson found 'divinity' in beauty: in the beauty of mathematics," and having this capability of seeking beauty ought to be viewed as a gracious act (Prior). So, for that, Dodgson began to find meaning in math—whether through logic puzzles written while avoiding doubt or through the way he sought to understand the complexities and intricacies of unsolved problems.

Where many of his contemporaries wanted to discover the new and to forget the past, Dodgson did the opposite. Consider his conservative approach to Euclid's axioms. He treated them as canon, where most others looked to improve the foundation Euclid had laid. This, as a whole, speaks to his inner will " 'to believe—in wonderland, fairytales, innocence, sainthood, the fast-fading vision of a golden age when it seemed possible for humanity to transcend the human condition'" (Prior). Dodgson's innermost desire to have deep faith and to live according to the morals that result from it act as an inspiration to many.

Though Charles Dodgson, or Lewis Carroll to those who know him from his literature, died in 1898, much can still be learned from him today. As an admirable man of God, life-long student of mathematics, and humble author of a vast array of works, Dodgson epitomizes one who worked unto the glory of God. I pray that others will say the same of me after I have passed on. I think Paul says it well in Ephesians when he says, "I, therefore, a prisoner for the Lord, urge you to walk in a manner worthy of the calling to which you have been called, with all

humility and gentleness, with patience, bearing with one another in love, eager to maintain the unity of the Spirit in the bond of peace" (English Standard Version, Eph. 4:1-3). As a believer, my identity is first and foremost found in Christ, and the way that I conduct myself – be that as mother, educator, or otherwise – should attest to that standard. Walking, teaching, and leading in grace and love is something I pray I am continually learning to do as the Holy Spirit continues sanctifying me.

The power and omniscience of God is unfathomable, yet I think that small glimpses of His nature are afforded to us through time spent learning. As a Christian, my aim is to know God relationally and intimately, and one develops a deeper awareness of who He is as a result of knowing what He has revealed to us. That is the beauty of studying mathematics. I see God revealed as Creator through mathematics. I see God revealed as a sovereign logician who has orchestrated our time on earth in a way that He is most glorified. I see God revealed as an artist through the study of symmetry as is done through group theory. By no means have I exhausted the ways that one can know God more through the study of mathematics, but even through this small list, one is able to see God's character revealed in the most seemingly minute areas of life.

Regardless of what stage of life or vocation I am in, the general theme remains the same: glorify God, live sacrificially, love others, and serve well. To live unto the glory of God encompasses a variety of ideas. However, it can be summarized by recognizing that God's glory is declared in a life marked by the pursuit of holiness and by the willing proclamation of the work that He is doing within my life. Living sacrificially is a life charcterized by selflessness and intentionality. As a teacher, that would mean putting my student's needs above my own. As a mother, that entails the giving of my time, regardless of my desires. Wrapped within this idea, is the necessity to love others. A life lived sacrificially is impossible without love. Similarly, one

can only truly serve another if the motivation is not self-centered, but rather done for the glory of God. Consequently, no matter if I am a mother or an educator, Christ will be exemplified through my life. That is my identity as a Christian.

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