INTELLIGENT DESIGN, SCIENCE, AND SEXUAL POLITICS

by

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To my daughters, Tanaka and Kagan.

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ABSTRACT

In this project, a strategic interdisciplinary approach is utilized to examine the connections between Intelligent Design (ID), science, and sexual politics. I argue that despite its scientific appearance, ID is best understood as a conceptual framework for motivating collective beliefs and actions in regards to policing gender and sexuality. This project has three stages. First, I challenge the scientific status of ID by establishing its continuance with earlier antievolution movements that were primarily focused on social, not scientific, elements. I query the function of science in ID discourse and argue that it is used symbolically as a source of authority and as a tool for both attack and defense. The second stage of this project focuses on examining the epistemological landscape of ID. I suggest that ID entails a Christian framework in a stronger but more subtle way than its antievolutionary forerunners by showing that key ID tenets are best understood as scientized versions of the Genesis story of special creation and Logos theology from John's Gospel. I also examine various ID media to argue that ID discourse entails an epistemology of ignorance in which "ignorance" is not simply a lack of knowledge but is a substantive practice that creates and maintains a pliable collective. The third stage of this project addresses the references to gender and sexuality that permeate ID discourse. I discuss how ID revives a simplified version of natural law to assert a strict gender dimorphism, compulsory heterosexuality, and gender-specific moral obligations. I conclude with a brief survey of ID-inspired activity in Canada and suggest possible sites for future research.

LIST OF ABBREVIATIONS USED

ID   Intelligent Design

CR   Christian Right

ICV   Institute for Canadian Values

FOF   Focus on the Family

EFC   Evangelical Fellowship of Canada

KL   Kindle Location

NFL   No Free Lunch

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CHAPTER 1 INTRODUCTION

1.1 Introduction

This dissertation is set at the intersection of science, religion, and sexual politics. More specifically, the concern of this project is the theory of intelligent design (ID), its place within the worldview of the Christian-right (CR), and its connections to the power-structured relationships enacted in social-organizing practices centered on and depicted in the biological and social categories of sex and gender. The CR, in this project, can be understood as a conglomeration of conservative evangelical Protestant groups committed to the belief that The Bible is the authoritative word of God, inerrant in meaning and content, and committed to belief in the imminent return of Christ to Earth (Herman 1997). The CR is most often depicted as a formidable presence in the US that is intricately interwoven with Christian nationalism and motivates large swaths of the voting public to pursue conservative Christian interests. While this depiction is present in this work, the contention here is that there is also an active and important faction in Canada. Christian nationalism in Canada is not entirely new (Wagner 2012, 349 KL), though its visibility has become more pronounced and its political influence seems to be growing (McDonald 2010, 7).[1] The political targets of the CR in Canada appear to align with the overarching objectives of a CR worldview within a global context; thus, there is a great deal of overlap both conceptually and practically between the US and Canadian groups (Herman 1994; Herman and Buss 2003). This dissertation is not an ethnographical

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[1] "KL" indicates a Kindle location reference.

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study of the CR, however, but will focus on the conceptual elements visible in the ID discourse as they relate to the connections between ID and sexual politics.

ID is the view that the natural world is best explained as the product of an intentional designer rather than undirected natural forces. It is motivated by a critique of evolution and is offered by advocates as an alternative science. It will be argued in this dissertation, however, that ID is not really about science in any conventional way but is best understood as a conceptual framework that grounds the CR worldview and is utilized to motivate collective beliefs and actions, particularly, though not exclusively, in regards to policing gender and sexuality. Furthermore, ID is not merely one element among others of importance to the CR; rather, it is foundational to the CR worldview in that it supplies the conceptual tools necessary for their position on other social issues and functions as a mechanism that shapes the epistemological landscape in ways conducive to their political agenda. Scholarly work in regard to this topic has been mostly focused on the status of ID as a scientific theory and its potential uptake in science education, but very little attention has been paid to its connections to sexual politics.

1.2 Dissertation Structure

This dissertation will proceed in several stages, moving towards the discussion of gender and sexuality in the final chapters. The roadmap of my argument is as follows: ID is not really about science; it is a tool based on epistemologies of ignorance that is used for motivating collective beliefs and actions; and it essentially structures a constrictive view of gender and sexuality in the interest of furthering a broad political agenda. Each of these claims will be addressed in sequence.

The first stage of this project seeks to establish that despite a sophisticated scientific appearance, ID is not really about science. I make this argument in two ways. First, I trace the historical roots of ID to show that ID is a product of an earlier antievolution movement that was motivated by social, not scientific, concerns, and that it retains many of the basic elements. Second, I take a closer look at what ID advocates assert as the science of ID to show that in this context "science," or rather the appearance of science, is utilized as a political tool, not as an epistemological support of their theoretical claims. Science is commonly understood as a realm of human activity pertaining to knowledge and discovery of the natural world, but this understanding is challenged within the context of ID.

The second stage of this project seeks to examine what, if not science, ID is about. At this stage, through a comparison of key ID tenets with key Christian doctrines, I suggest that ID theory purports a decidedly Christian framework despite claims of ID proponents to the contrary. With this suggestion in hand, I take a look at ID from a religious studies perspective to show that the theory of ID is better understood as a religious doctrine that does the crucial job of conceptually creating and organizing a Christian collective. Looking at ID through a religious studies lens reveals how ID utilizes epistemologies of ignorance to conceptually create and manage a cohesive collective.

The third stage will bring to the fore what appears to be a primary concern of the ID discourse—gender and sexuality. In this section, I bring out the connections among ID, gender and sexuality, first, by providing a brief overview of natural law and morality in ID discourse and then examining how natural law is utilized to assert and advocate for

a system that binds faith, family, and free-market capitalism into one natural (as ID proponents claim) social-organizing structure that is said to be a product of the intelligent designer. The traditional family is heralded as the fundamental social unit of this system, and as such, it is the fulcrum of sexual politics in ID discourse. ID advocates posit a biological essentialist perspective to ground their assertions and promote restrictive and regressive sexual politics by asserting normative ideological positions on such issues as marriage, sexuality, and gender roles. This phase will examine these claims in detail.

ID is harnessed, both explicitly and implicitly, by institutions and organizations to justify their political positions and action. This project will be supplemented with a sample of such activities within Canada. This sampling is by no means a comprehensive examination of specific activist projects; rather, it is intended to suggest a platform for further investigation with the insights from this project in hand.

1.3 Methodological Approach

In this project I adopt a non-disciplinary approach which I call "strategic interdisciplinarity." With this term I seek to capture the idea that my approach involves a type of wandering around the issues and selecting a variety of tools that allow me to show what I "see." I have adopted and developed this approach to explore this issue in ways that traditional disciplinary structures cannot accommodate, and I will expound on this claim shortly. "Interdisciplinarity" has the added bonus of being, as of yet, relatively unscripted within the academic domain which permits me to sidestep the polemics that this topic typically entails. In the following chapter, I flesh out my approach in greater

detail, but at this point I would like to explain why one might want to look at ID in terms of gender and sexuality rather than the more usual ways of science and education.

The story of the introduction of a new sexual health curriculum in Ontario serves as a helpful example of how ID and sexual politics might be linked. On September 24, 2011, the *National Post* ran a nation-wide advertisement that read "Please, don't confuse me" (See Figure 1). This ad was placed by the Institute for Canadian Values (ICV), a CR organization based in Toronto, Ontario. The target of this ad was an updated elementary school curriculum in Ontario that would have included classroom discussions on gender, sexuality, and lesbian/gay/bisexual/transgender (LGBT) rights. According to the ICV, homosexuality is a sin from which one must seek forgiveness and deliverance, and teaching tolerance of diversity in this regards amounts to an endorsement of unnatural sexual practices and unfettered immorality that undermines the very fabric of society.[2]

As part of this ad, the ICV solicited action by the general public against the Ontario provincial government. They encouraged people to sign a petition by going to their website entitled "stopcorruptingchildren.ca," and they encouraged the public to contact officials at various levels of government responsible for the education update. The updated curriculum was introduced and was to be adopted by the provincial Liberal government of the day, and the controversy fuelled by the ICV opposition was utilized by opponents to the Liberals in the subsequent election that took place several weeks after the appearance of this ad. In light of this controversy, the provincial government withheld

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[2] An episode of Charles McVety's television show from 2010 called "The Word," in which he makes these views explicitly can be found here: https://www.youtube.com/watch?v=NIz498m2X6Y. McVety also articulates these ideas explicitly on a political talk show called the Agenda with Steve Paiken, also from 2010. This episode can be found here: https://www.youtube.com/watch?v=IJajAFCZPM4. Last accessed June 27, 2014.

the changes.[3] While surely other factors contributed to this outcome, there is a clear trail

to be found among the ambitions of the ICV, public action, and this major educational

policy decision.

ICV is a CR organization in a constellation of institutions and political actors that

now punctuate the Canadian horizon in a growing network of affiliated organizations.

The ICV had also made headlines several years earlier when its leader, Charles McVety

Figure 1: ICV Anti-transgender Ad. This is an image of an online version of the ad that was placed in the *National Post* on September 24, 2011.

(president of ICV and high-profile CR leader) led the promotional drive for the ID

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[3] News coverage of this story can be found on the following websites:
http://www.cbc.ca/news/canada/toronto/story/2010/04/23/ontario-education.html,
http://www.cbc.ca/news/canada/toronto/sex-ed-opponents-claim-victory-in-ontario-1.899830, and
http://www.thestar.com/life/parent/2010/04/26/ontario_to_start_over_with_sexed_curriculum.html. Last
accessed June 27, 2014.

documentary *Expelled, No Intelligence Allowed* (Frankowski 2008). This movie was promoted via an extensive advertising campaign, strategic showings in mainstream theatres across the country, and showings in various religious and political settings (including a special showing for members of Parliament) organized and hosted by McVety (McDonald 2010, 206).

In viewing this ad and reading various media bits in relation to it, it became clear that ICV and similar groups were advocating for both ID and gender essentialism—the idea that one's biology is the predominant dictator of one's place and function in society. What do these two topics have to do with each other, and how does one get from ID to the sexual politics of this ad? It was apparent that this group was asserting that "unnatural" sexual practices and gender identities were somehow misaligned with human design and human nature. In this way, the connections between ID and gender and sexuality stood out as an object of interest.

The challenge of this type of project is to develop a means of making sense of what one finds, particularly when the connections are widely dispersed. As the "wanderer" in this case, I draw on the tools that I already have at my disposal and seek out new ones as necessary. For example, in chapter three I adopt an historical approach to trace the roots of ID and establish its continuity with earlier Christian creationist movements. In the sixth chapter, however, I utilize a feminist lens to examine various ID media and identify the ways in which ID is instantiated in its articulation of issues of gender and sexuality. The point to be made here is that the methodological approach, to which I refer to as "strategic interdisciplinarity," constitutes a kluge of academic tools helpful in bringing to light the various elements of the objective of interest.

Strategic interdisciplinarity also has a political advantage for this project. The discourse surrounding the topics of ID and evolution is primarily adversarial, particularly within individual disciplines, which tend to be marked with a specific consilience of perspectives either for or against—typically against. Parties on either side of the issue are mainly concerned with adjudicating truth claims, but while many important insights can be derived from analyzing ID in these contexts, the polarized structure elides significant complexities. Furthermore, this dispute is extremely contentious, not simply within academia, but within the general public as well. Indeed, it appears that the topic is so controversial that academics by and large are hesitant to tackle the issue at all, which has left academia somewhat silent on a very prevalent concern.[4] In this way, traditional disciplinary approaches, to the extent that they take up on one side or the other of this issue, create significant gaps that require an alternative strategy. Strategic interdisciplinarity allows me to avoid the dichotomous script associated with the established disciplines and probe the negative spaces that they create.

"Interdisciplinarity" is a term in flux. Under this heading a variety of intellectual projects are transpiring, and some familiarity with the context of its employ is required to determine its meaning. Minimally, what one can ascertain from the term is that multiple domains of knowledge are being utilized. The ambiguity associated with interdisciplinarity is beneficial to this project, however, because it allows for the establishment of a context involving multiple knowledge sources without identifying with any one source in particular. This allows one to garner insights from relevant disciplines

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[4] This claim is unpacked and supported in the following chapter.

without necessarily adopting one or the other side of the polarized discourse that a specific discipline might embrace.

The term "strategic interdisciplinarity" developed for this project thus does double duty. The "strategic" element of this methodology connotes both the selection of various epistemic tools and the political concerns associated with this topic. Disciplinary structures tend to involve adversarial perspectives and ignore knowledge claims and approaches to inquiry that do not resonate with their established positions and commitments. It is therefore necessary to adopt a migratory technique that allows for traversing disciplinary structures and boundaries while still utilizing some of the insights and approaches that they offer. The strategic element is reflected in the sources being utilized and the analytical approaches that are taken.

This approach seeks to accommodate the messiness of a work that incorporates the seemingly ambiguous elements of activism and acceptance. On one hand, a commitment to challenge and change the impact of ID on policy and politics motivates elements of this dissertation, but on the other hand, a realization of the unresolvability of this issue motivates a pragmatic acceptance of the conflict. This acceptance, in turn, motivates descriptive elements that serve the greater paradoxical ideal of moving forward given the impasse.

1.4 Context and Contributions

As noted in the opening of this introduction, there appears to be a global rise in religious-nationalist politics. In Canada, this movement has been identified as the CR, and within this movement are a constellation of themes and issues of importance to its

members: gay marriage, homosexuality, abortion, and gender identity are prime examples. In keeping with these concerns, the CR is exerting substantial political pressures to direct public/social policy and shape the Canadian social landscape (McDonald 2010), and the Stop Corrupting Children campaign is a compelling example of this movement. This dissertation is relevant and significant in the Canadian context because it will demonstrate that ID is crucial to the CR worldview as a prerequisite for their position on such issues, and it will, in the end, identify some ways in which the CR promotes political activism in Canada that is coherent with this worldview.

In Canada, the issue of ID is sometimes shrugged off as being uniquely American, represented by the highly publicized and emotionally charged legal contests over public education, but such a gesture is naïve (Wiles 2006b; McDonald 2010). Certainly Canada has not seen litigation on a scale comparable to that in the US (Baumeister, Dale,and Murave 2000; Wiles 2006a), but the lack of visibility in the Canadian context speaks not to the absence of ID but rather to the stealth of its growth. Within the constellation of CR organizations is a growing network of high-profile politicians, policy advocates, and institutions that endorse and promote ID (McDonald 2010). While this dissertation will not constitute a detailed overview of the CR in Canada, it will contribute a novel perspective that may be beneficial to researchers delving into the role of religion at the interface of science and public policy.

1.5 Chapter Summaries

Following this introductory chapter, Chapter Two addresses the method employed in this work in greater detail. In this chapter I revisit the terms "strategic" and

"interdisciplinary" to explain how and why I choose the tools I do. In this chapter I also discuss how ID is currently situated within relevant academic disciplines and the impact of this situatedness on the methodological approach of this work.

Chapter Three addresses the initial element of the claim that ID is not really about science. The objective of this chapter is to show the Christian creationist heritage of ID. I show this continuance by querying the persistence of antievolutionist thought as it surfaced during the time of Darwin and developed into a more formal antievolutionist movement that expanded in the decades following. I suggest that key to this persistence and central to ID is the development and refinement of an effective antievolution methodology. I pursue this query by examining responses to Darwin's theory of evolution, the development of antievolutionism in the Protestant Christian context, and the eventual appearance of ID. What becomes apparent is that religion, not knowledge, is the primary driver for the creation of ID.

Chapter Four will provide an overview of the tenets of ID theory. In this chapter, two key tenets—irreducible complexity and specified complexity—are examined. I take a closer look at what appears to be the science of ID to argue that science in ID discourse is used as a repository of evolutionary critiques (though these are used for rhetorical purposes, not for engaging in the practices of knowledge and discovery), a source of epistemic authority, and as a defense mechanism. By examining various ID media it becomes apparent that science is used symbolically in this discourse primarily as a mechanism of influence and persuasion.

Chapter Five shifts the focus from what ID is *not* about to what it *is* about. To this end, this chapter seeks to examine the conceptual framework of ID. I conduct a close

reading of key tenets of ID and suggest that ID entails a Christian perspective in a much stronger but more subtle way than its creationist forerunners. In the process I also suggest that ID employs epistemologies of ignorance that function to create, structure, and populate a collective epistemic space. An epistemic space is created by positioning ID in opposition to evolution such that one must "choose" a spot, and this space is hierarchically structured by ID proponents who occupy a superior position within the movement in that they claim to possess insight into the mystery (as they deem it) of the origin of the world. What becomes apparent, however, is that ID discourse proffers epistemologies of ignorance that veil actual scientific knowledge and that create and exploit fear of the unknown as a means of gaining and maintaining support. ID is offered as the antidote to the uncertainty of random undirected natural forces that ID advocates associate with evolution.

Chapter Six arrives at the issue of gender and sexuality in ID discourse. In this chapter, I discuss the concept of natural law posited by ID advocates. Based on this concept, ID advocates postulate a system that brings together family, faith, and free-market capitalism as the "natural" social-organizing structure best able to promote the flourishing of both individuals and society. The ideal traditional family is said to be the fundamental social unit of this system, and as such it is the fulcrum of sexual politics in this discourse. This discourse posits that human beings are intentionally designed in a gender-dimorphic heterosexual way, and it argues that conceiving of gender and sexuality in any other way equates to the transgression of design, impedes functionality and is detrimental to individuals and societies. In this chapter I provide a general overview of these ideas as depicted in ID discourse. I then provide a sampling of how this ideology is

instantiated into a rather coherent but broad set of positions on issues related to gender and sexuality. I conclude this chapter with a discussion of the potential impact of ID ideology with reference to some fundamental feminist texts. This chapter will expose the deep-seated and crucial connections between ID and regressive sexual politics.

Chapter Seven will conclude this project by returning to ID in a Canadian context. A brief overview of the development of antievolutionism in Canada sets the stage for a sampling of several CR organizations and projects in Canada that utilize ID, both explicitly and implicitly, to ground activism that seeks to undo progressive political advances. The objective of this chapter is to point out that research on Canadian antievolutionism is small, though the potential political influence of ID in the hands of the CR is great. This chapter seeks to suggest and open space for future work with the insights of this project in hand.

Chapter Eight will summarize this project. In this chapter I review key discussions and comment on their significance. I also discuss some limitations and considerations for moving forward given the impasse apparent in creation-evolution debates.

In this project I seek to provide a new way of looking at ID—how it is portrayed and how it is utilized. ID is heavily steeped in scientific garb, but this appearance has largely distracted audiences from its most potent utility. In this thesis I will show that ID is not about science per se but is about legitimating a CR worldview that involves the assertion of regressive sexual politics through a policing of gender and sexuality. This thesis is not an ethnography of the CR in Canada, and an explicit Canadian focus only bookends my work. The work that is done in between, however, is a necessary first step

to delving more deeply into the specifics of ID in a Canadian context. My hope is that

this project will lead the way in this direction.

CHAPTER 2 STRATEGIC INTERDISCIPLINARITY

2.1 Introduction

Examining the relationship among ID, gender, and sexuality requires seeking out patterns and relationships that traverse multiple disciplinary domains, and as such, an interdisciplinary approach is necessary. Furthermore, ID is controversial both within the academy and among the general public, and so this project requires some academic diplomacy. In this chapter, I propose strategic interdisciplinarity as a means of examining this topic. This term is coined here to capture what might best be described as a meandering through ID discourse, and the scavenging of a variety of tools to interpret the connections and patterns that become apparent. In other words, in this dissertation I review and analyze ID discourse from various academic perspectives and at various epistemic sites pertinent to the guiding question: What is the relationship between ID and sexual politics? Strategic interdisciplinarity is also meant to construct a political neutral zone, of sorts, away from the constraints of the disciplinary structure that, in this case, limit analytical effectiveness rather than enhance it.[5]

It is difficult to describe an iterative non-linear process of investigation in a structured linear way, but that is precisely the aim of this chapter. I attempt to accomplish this by: providing an overview of the relationship of ID with traditional disciplinary structures in order to explain why an interdisciplinary approach is necessary; drawing on the interdisciplinary studies literature to assert the virtues of epistemic wandering; and

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[5] I use the term "political" both in the title of this dissertation and throughout to refer to the power dynamics involved in social-organizing ideals and practices. Unless otherwise stated, I am not referring to an official governing body. In this particular case, "political" refers to the power-relationships and social-organizing practices that are inherent in the disciplinary structure of the academy.

highlighting the various academic perspectives that I adopt throughout this dissertation. I take this chapter to be a reasonable facsimile of my approach and not a precise contract.

2.2 Disciplinary Considerations

In this section, a general overview of some disciplinary perspectives in regards to ID is presented in order to show that an interdisciplinary approach is necessary. Typically ID is addressed within the domains of science, science studies, philosophy, and/or religious studies, and though each area offers some different insights, there often seems to be an agreement on the "proper" location from which to study ID: "not here," wherever "here" might be. The characteristic approaches of these fields of study are at times helpful, but they also erect barriers to inquiry by defining ID by exclusion and/or neglect in an apparent bid to disassociate from the topic in general.[6]

The scientific community is very clear: ID theory is not science.[7] Proponents of ID argue that the natural world is too complex to have arisen without the intentional action of an intelligent designer (Behe et al. 2000; Dembski 2001; Wells and Sjogren 2002; Meyer 2009; Johnson 210). ID is presented as a legitimate scientific alternative to evolution, but within the academic realm, ID is not considered a science at all. Academic science adheres to the dictates of methodological naturalism—the limiting of science to natural phenomena discerned via empirical evidence, explainable by regularities in

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[6] This statement is not intended to imply a judgment as to whether or not such exclusion is justified. I am merely attempting to present a layout of the land, so to speak.

[7] There is, of course, no definitive "scientific community." However, what I intend this term to loosely encapsulate is a sense of a group of scientific practitioners that generally adhere, if only in theory, to the traditional understanding of science as pertaining to the natural world and accessible through empirical inquiry. Also implied in this term is the group of science practitioners that would constitute a peer group such that they guard and establish the standards and practices of their knowledge domain.

nature, and subject to verification and falsification (Pennock 2001; Shanks 2007; Ehrlich 2006; Miller 2007; Sarkar 2011; Ravitch 2010; Rieppel 2010). ID is excluded from science because by definition it refers to something outside of the natural world. As such, science cannot speak to the validity of its claims, and consequently, ID cannot be included under the "science" label. Because ID is deemed as not science, science is technically precluded as an applicable disciplinary domain.

ID does garner some attention within science studies. Steve Fuller (2007), for example, argues that science, its definition and interpretation, is socially constructed and empirical evidence is understood within specific conceptual frameworks that shapes how one sees and interprets the world. Differing conceptual frameworks can thus lead to differing perspectives and theories derived therefrom. The conceptual context in which empirical evidence is interpreted, and the social context of those who do the interpreting, largely determine what science is and what it means. In this account, throughout the history of science, reference to the divine has provided a fruitful conceptual backdrop (Fuller 2007, 11). In the specific case of ID, Fuller argues that religious motivations are insufficient grounds for barring a proposed scientific theory, and furthermore, ID is concerned with salient phenomena that evolution fails to adequately address (127). Fuller bolsters his position by bringing to bear insights from the history of science to argue that belief in a monotheistic God, in whose likeness and image many believe humanity has been created, provided an epistemological gateway into the inner workings of nature and a window into "the mind of God" (13). This belief, or some version of it, was highly influential in initiating and sustaining scientific inquiry throughout history (16). Fuller accuses modern science of being progressively restrictive as to what claims count as

scientific and historically ignorant of the large role that religion has played in the development of science (160). On these grounds, Fuller provides support for ID as a legitimate scientific project and suggests that it is beneficial for educational purposes when it opens the door to inquiry beyond the constraints of contemporary hegemonic scientific discourse (Corbyn 2006, np). Fuller's ideas, however, have met with great resistance and harsh criticism, and it does not seem that his position resonates with many other science studies scholars (Corbyn 2006, np). Fuller recounts the intensity of resistance he has encountered, and he recommends for those working within the field of science studies that it is best not to undertake work on this topic at all unless their academic tenure is very secure (Corbyn 2006, np).

Any project seeking to investigate ID and/or its network of ideas, however, will inevitability draw on the tools and insights of science and science studies. ID advocates, for example, raise issues that may pose legitimate challenges to established knowledge and scientific institutions. ID advocates evoke the notion of Kuhnian paradigms to characterize naturalism as only a relatively new paradigm and suggest that its durability is in question.[8] They claim that empirical observation need not be tethered to naturalism and that the pervasiveness of a naturalistic worldview occludes the possibility of an overlap of religion and science which differs from the current dominant notion of the two being separate and distinct domains (Lambert 2006, 839). A successful methodological strategy must explore and evaluate such claims, which are clearly situated within a

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[8] ID advocates assert that distinctions in science studies between methodological and philosophical naturalism are irrelevant because methodological naturalism is so pervasive that it leaves no room for a distinction in any practical way (Johnson 2001, 72). The concept of naturalism is discussed in more detail in Chapter Four.

science studies context, but it must push beyond evaluation into an understanding of the context and political agenda from which such claims emerge.

ID does not fare well within philosophy either. ID advocates make strong epistemological claims, and so one might expect that philosophy is well suited to explore its tenets. Within a philosophical context, however, ID is often banished to the archives as an outdated and uninteresting subject for contemporary conversations and/or disregarded as a philosophical subject entirely.[9] Michael Ruse (2007), for example, argues that "arguments from design" are nothing new and should command little philosophical attention (38). Ruse explains that such arguments date back to antiquity and reappear throughout history as variations on a theme: the world is too complex to be a product of chance, and by extension, is the product of a creator (37). Ruse urges his readers not to take the ID movement too seriously: "Been there already. Done that already" (39).

On one hand, Ruse makes a valid point, but he neglects an important element. Arguments from design, though present throughout the ages, have not prevented the proliferation of science and technology. With the current "strength of findings and deep thinking," as Ruse puts it (25), it would seem that such ideas should now be bankrupt and powerless. What Ruse neglects, however, is the extent to which the concept of ID is present in popular, religious, and political culture, and the impact of these domains on rational discourse and public policy.

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[9] This is actually an interesting phenomenon because philosophers overwhelmingly discredit the philosophical significance of ID, yet, it appears that the majority of articles written on ID come from established philosophers working squarely within the discipline of philosophy. This seems odd for a supposedly unworthy or uninteresting philosophical topic. See Appendix A for a disciplinary overview of ID-related peer-reviewed publications.

Philosophers Daniel Dennett and Barbara Forrest take ID a little more sternly, but still disregard it as a philosophical issue. Forrest (2001) sees ID as a threat to science and the legacy of Darwin's "hard-won place in the scientific enterprise" (43).The concern is not so much with the philosophical tenets of the theory; rather, the concern is with the methods whereby ID is being articulated to a more general public. More specifically, Dennett (2006) calls the proliferation of ID "a hoax" and "coup for a well-organized group of conservative religious activists who are intent on persuading the American public that there is a significant controversy within biology about the status of the theory of evolution by natural selection" (34). In this account, it is the medium and the audience, not the message itself, that is worthy of note.

The problem with Dennett's assertion is that to distinguish between the message and medium misses entirely the emergent properties not visible in either individual element. ID, along with a number of other creation-based stories, constitutes a fundamental belief of a substantial number of people (Newport 2014), and if indeed it poses a threat to the stature of science, then to reduce philosophical positions and epistemic disputes to public relations strategy is to dismiss too lightly some deep-seated discrepancies at the heart of this matter. As we will see in later chapters, ID constitutes a fundamental element of the CR worldview that engenders social values and ideals that are held to be founded on absolute truth. Dennett's position ignores the fact that ID represents a formidable reality to many people, and to dismiss the philosophical basis of ID suggests that he paints a great number of people with a broad brush of intellectual naiveté and dismisses a large population as fundamentally irrational. George Lakoff (2010), however, argues convincingly that most people operate very rationally, but within

a specific conceptual framework. Communication between people who do not share a common frame of reference can often appear unintelligible or illogical, but to simply dismiss another's perspective is to miss an opportunity to broaden understandings of unfamiliar epistemic domains and their potential impacts in the world.

What many scientists and philosophers do agree on is that ID is a religious perspective and not a scientific matter. Even so, within religious studies, scholars contribute to the controversy by focusing on truth claims and/or ignoring the issue almost entirely. Ignoring this topic contributes to the controversy in that it seems to render it an unimportant religious topic when to many it is a very important topic. Religious studies as a discipline is rooted in an interdisciplinary heritage with a wide spectrum of methodological approaches that, broadly understood, seek to examine religious beliefs, institutions, and practices (Capps 1995, x; Taves 2009). Minimally, ID entails belief in a more-than-natural Designer and it would seem that religious studies is the most appropriate place to situate this research.

Recent scholarship addressing arguments from design, however, and ID specifically has been relatively scarce. What is available can be generally distilled into a bifurcated structure: scholars tend to either describe ID as merely an event of recycled history or adopt an apologetic position. This is generally the case even though religious studies involves various approaches such as conceptual analysis, historical analysis, and ethnography, for examples.

There are some notable exceptions, however, as there is some scholarship that has made an important contribution to understanding this issue. Arthur McCalla (2013), for example, uses an historical approach and suggests that the contemporary resurgence of

arguments from design stems from a cultural inheritance of reactionary biblical interpretation that resisted the undermining of biblical authority by science. He argues that in order to understand the prevalence of such a perspective it is necessary to consider the ways in which biblical interpretation was influenced by the development of science and technology, especially in the seventeenth-century scientific revolution (12). Of particular importance was Newton's commitment to the unified harmony between the Bible and the natural world (11). That such a fusion could lead to an unprecedented expansion of knowledge and invention seeded a cultural affinity of science and religion bolstered by empirical validation, but the successes that science afforded demarcated it from religious belief and science and religion were later split into separate categories of experience.

The majority of work on ID by religious studies scholars, including McCalla, even when it provides essential insights, easily falls into one of the two camps: for or against. Apologetic stances, for the most part, tend to diminish accepted scientific evidence as being but one plausible perspective (see Macchia 2006, for example). Other apologetic-like literature deals with rather abstract conceptual issues such as tensions between ID and Western theodicy (see Corabi 2009, for example) or ID and charges of anthropocentricism (see Manson 2009, for example). The bifurcated structure is replicated at a secondary level because taken together, both sides in religious studies validate ID as essentially religious, but ID advocates strongly object to this characterization. They insist that ID is a valid scientific theory (Behe 2001; Dembski 2006; Meyer 2013).

Scholarly work on ID is, understandably, often concerned with law and public policy as ID advocates seek to insert ID theory into the traditional science curriculum. Certainly, there are a few forays into the social nature of this issue such as Freeman and Houston's (2009) analysis of public opinion polls or the study of public opinion among university students on the origins of life question (de Souza et al. 2010). But there seems to be a great degree of caution surrounding this discourse in that there is little talk of the conceptual framework of ID and little exploration and evaluation of the social dimensions of this theory and its affiliated social movement. This neglect is despite the fact that advocates draw on the concepts of ID to explain and justify a wide range of issues including morality, sexuality, the economy, and even climate change (see Steiner 2012, for example).

Although religious studies seems like an ideal location from which to examine ID, it too has serious shortcomings. Most significantly, the literature on ID within religious studies is surprisingly small which suggests a pointed lack of attention to an important contemporary issue. There is an intense controversy surrounding the debate that no doubt provides some explanation for this state of affairs.

The lack of attention to ID in religious studies may reflect a broader uneasiness within the academy. At the post-secondary level, universities have been at odds over where to place this debate—in science or elsewhere— as seen in a boisterous controversy that erupted after a conference on ID was held at Cornell in 2005. Scientists and other academics from the university were dismayed with the notion of Cornell being associated with and seen to endorse the theory of ID. The president, Hunter R. Rawlings III, publicly responded to this controversy in his 2005 State of the University Address by

saying that ID should be taught and studied in various disciplines, but that it does not

qualify as science.[10] Such comments put the university in the national spotlight and

inspired criticisms of intolerance (York 2005).[11] Decisions concerning the teaching of ID

in post-secondary institutions typically involve substantial, and at times harsh, media

coverage, as in the case of the University of Kansas' decision to teach Intelligent Design

in conjunction with mythology.[12] More recently, Ball State University in Indiana received

a rash of negative publicity after it came to the public's attention that one of its professors

was teaching ID in a science class and that a well-known ID advocate had recently been

hired (Kingkade 2013, np). The publicity prompted Ball State president, Jo Ann Gora, to

publicly announce that the university would no longer teach ID, and she reiterated that

Ball State University is in line with the majority of the scientific community opposed to

ID and views it as non-science (Kingkade 2013, np).

Not only are the disciplinary decisions politically tricky, so too are associated

funding issues. In Canada, for example, the controversial decision by a federal funding

agency that rejected the proposal of a project aimed at investigating the rise in popularity

of the Intelligent Design theory, according to one reporter, reflects a specific concern

with the political implications for religious segments of the population (Boswell 2006).

This is probably not the entire story as it is more likely the case that the proposed project

lacked the quality required by the funding body, but the details of this case are beside the

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[10] The full transcript of Rawlings' address can be found on the university website:
http://www.cornell.edu/president/announcement_2005_1021.cfm. Last accessed June 28, 2014.

[11] News coverage can be found here: http://www.nytimes.com/2005/10/22/nyregion/22cornell.html?_r=0.
Last accessed July 1, 2014.

[12] See here for the full article: http://www.livescience.com/3923-university-teach-intelligent-design-myth.html. Last accessed June 26, 2014.

point. The point is that many research project proposals are rejected each year without remark by the media, but this topic attracts negative controversy, not only in the academy but in the general public as well. The volatility of this topic no doubt impedes inquiry.

That such controversy abounds, however, should not deter academic exploration; rather, it should serve to flag the issue as particularly germane. If academic institutions, religious studies departments in particular, cannot accommodate these types of intellectual projects, it would appear that they cannot stay relevant in the fast-paced cultural dynamics exemplified by this controversy. Attitudes and sentiments of avoidance are not helpful but feed into the controversy by leaving the issue veiled in a type of academic mystique. The key to navigating this matter beyond the current constraints is to find a suitable location for analysis.

In this section, I have attempted to show the shortfalls of a disciplinary approach for this project. While the academic areas discussed have important tools and insights for this project, they come with preset disciplinary orientations and methodological norms that seem to bracket off this topic. Foucault (2003) describes disciplinarity as an exercise of power whereby academic communities produce and govern knowledge and practitioners that both creates and sustains conventions necessary to maintain advantage in an adversarial environment. Disciplines determine the boundaries of knowledge by classifying, including, excluding, and meting rewards and punishments that quarantines and mediates epistemic conflict. Foucault writes that "disciplines will define not a code of law, but a code of normalization" (2003, 38).

This is not to say that disciplines are in any way static, and it is the dynamism of disciplines that creates spaces for new knowledge. Dispersion, fragmentation and

hybridization all characterize the history of disciplinarity. One must become aware of the knowledge, methods, social values and norms of a knowledge domain at specific times and places in order distinguish between other knowledge domains (Chettiparamb 2007, 6). This awareness is important for this project because I am interested in the boundaries of knowledge domains and the gaps created by their differentiations in regards to the issue of ID. Traditional disciplinarity has been, and is, effective in many ways, but to the extent that, at this time, my topic is problematically situated in relation to disciplinary structures, it is insufficient for this project. It is to those gaps that I must turn.

2.3 Interdisciplinarity

Given the status of ID within the disciplinary structure of the academy, it seems that the possibility for examination of this issue requires an alternative location. Minimally, I will need to employ an interdisciplinary approach that draws on multiple disciplines, but I will need to add something further because I not only need disciplinary insights, but extra-disciplinary insights as well. I discuss the "extra" in the following section on strategic interdisciplinarity, but first there is some foundational work to be done in this section. In this section I will establish what I mean by and how I use the concept of interdisciplinarity. Interdisciplinarity offers both political and epistemic advantages, as will be seen through a sorting of terminology and a discussion of complexity theory within the interdisciplinary studies literature. In this way I will lay the foundation for the strategic interdisciplinary approach that I develop in the next section.

A sorting of terminology here is necessary to show the political advantages of interdisciplinarity. The term "interdisciplinary" saturates academia, symbolically flagging

the academy's relevance in a complex contemporary landscape, but what the term actually means remains elusive. Likely, such vagueness is accounted for, in part at least, by the diversity of academic projects in a variety of academic locations claiming ground within this categorization. Interdisciplinary projects come from all corners of academia, and so "interdisciplinarity" on its own may signify little to nothing in terms of content or context.

Efforts to define "interdisciplinarity" have, as of yet, not been particularly successful. Especially in relatively recent areas of academic interest, such as women and gender studies, environmental studies, or cognitive psychology, for example, scholars often preface their work with interdisciplinary disclaimers of sorts that demarcate a position extending beyond the usual parameters of a single discipline. Undoubtedly such work draws on multiple disciplines, but often the interdisciplinary disclaimer functions mainly to license a departure from disciplinary confines while still giving one discipline a dominant role. The most one can know about such work is that it utilizes something from more than one discipline, but what that something is not always obvious—is it theory, method, assumptions, results, or something else?

Confusing the matter even more is an apparent interchangeability between the terms "interdisciplinary," "multidisciplinary," and "transdisciplinary." For example, in an article in the journal *Environmental Science & Policy*, one author describes "transdisciplinarity" as: "the overall coordination of science, education and innovation towards a specific societal purpose" (Pohl 2008, 46). Other authors in the same journal utilize "interdisciplinary" and "transdisciplinary" together, explaining that "interdisciplinarity" refers to "crossing disciplinary boundaries" and "transdisciplinarity"

equates to interdisciplinarity plus "the crossing of professional cultural boundaries between practice and research" (Harris and Lyon 2013, 110). Yet, within the fields of health sciences and education, "interdisciplinary" is often used to describe a team-based approach to addressing complex but specific problems. In this context, "interdisciplinary" is simply multidisciplinary or "the collaboration of researchers from various disciplines to solve a common problem" (Lakhani, Benzies, and Hayden 2012, E260). The utilization of the term "transdisciplinary" in the earlier context of environmental studies seems virtually identical to the term "interdisciplinary" utilized in health studies, which leads one to conclude that the distinction to be made in regards to the definition used is not based on the type of practices that are actually taking place but on the knowledge domain in which they are taking place. Such ambiguity makes the task of definition somewhat cumbersome, perhaps even pointless, but the ambiguity itself is not necessarily problematic and may even be beneficial in some cases.

The interdisciplinary approach, whatever that is, has been valuable for a number of contemporary problems that involve intricate relationships among various elements, particularly at the intersections of natural and social sciences. Its uptake in studies of climate change, (Lynch, Tryhorn, and Abramson 2008), bioengineering, and education (Handler 2013) provides numerous examples of interdisciplinarity as an effective means to address complex problems and glean insights and solutions not found in a single disciplinary context.

Interdisciplinarity is valuable for this project as well because the ambiguity of interdisciplinarity is utilized to disrupt disciplinary classification that may tacitly confer limiting attitudes and perspectives of the disciplines. Simeon Dreyfuss (2011) writes that

"we humans are constantly recording, sorting, classifying, and passing judgments on things. We are pattern-seeking animals" (73). While this impulse toward order and classification has been essential to much of the survival history of humans, it seems that there is a tendency to extend the knowledge of a known category to one's novel experience as a type of comprehension economization. The problem is that this process involves an assumption that the properties of the known category are applicable or transferable to the new experience. This can elide interest and epistemic investment in the complexities of issues and hamper the possibilities of new insights and ideas. The origins debate in general, ID specifically, is a highly dualistic discourse, and so when one intends to write on this subject, one might expect that it is likely that readers will look for clues as to which camp the project belongs and then intuit the ensuing arguments and insights based on a preset series of ideas generally associated with each side of the discussion, perhaps without even proceeding beyond the preliminary remarks. Utilizing "interdisciplinarity" to symbolize an unmarked space to disrupt the dualistic structure can indeed be helpful to the extent that it cannot be readily assimilated into the familiar categories and encourages a second look.

Along with the political advantages of interdisciplinarity, and largely driven by the debates over meaning and applications, interdisciplinary studies has coalesced into a rather distinct discourse over the last few decades, and there is a theoretical strand within this literature that is quite helpful for this project. Bill Newell (2001) writes that "interdisciplinarity is necessitated by complexity. The nature of complex systems provides a rationale for interdisciplinarity" (1). Along similar lines, Angelique Chettiparamb suggests complexity theory as an effective means of epistemological

bridging of disciplines and domains of knowledge (2007, 24). It is this element that I seek to tailor to the present context.

In Newell's work, "complexity" is defined rather distinctively and refers specifically to complexity theory as derived from the natural sciences that embraces a systems perspective and seeks insight into how complex systems develop and function (2001, 4). Complex problems are multi-faceted and multi-layered such that they may have different appearances from different perspectives, and different perspectives often reveal different sets of relationships (Newell 2001, 2). A problem modeled as a complex system suggests that there are multiple components within a definable space or context that interact via dynamic non-linear relationships enabled by contextual feedback loops that produce emergent or novel properties that are more than the sum of the individual constituent components (Newell 2001, 9). Newell's approach seeks to view phenomena from a systemic perspective, meaning that it seeks to address the synergy between various components of a complex phenomenon. The economy, for example is made up of consumers, businesses, and regulators (among other things), and the interaction of these components leads to behaviors and properties that are not visible from the focused study of any one of these individual components (Manson 2001, 406). It is the role of the interdisciplinarian, according to Newell (2001, 13), to look for and inquire into the relational aspects of such a system and foster perspectives from a more abstracted level, or more holistic level.

Newell's argument for complexity as interdisciplinarity has garnered some responses significant to this project. Meek (2001) argues that Newell's proposal is particularly helpful for modeling community issues and deriving responses and solutions

for multi-dimensional problems. Mckey (2001) critiques what she sees as a too generic presentation of complexity that does not distinguish between complexity as representing the phenomena and complexity as representing the method. Mckey writes that Newell's theory "does not clearly distinguish systems and processes that produce phenomena and the system and process that produces knowledge of phenomena" (65). Mckey proposes instead that interdisciplinarity be understood as an incremental iterative process, which means that interdisciplinarity is best understood as a methodology that reflexively repeats and incorporates new knowledge into the scholarship process thus leading to innovative knowledge. Welch (2007) takes up complexity to model and explain the role of intuition as a cognitive process involved in the emergence of interdisciplinary insights. Klein (2001) suggests that complexity is best understood as a metaphor within the interdisciplinary context. I have selected the comments most relevant the interdisciplinarity that I have in mind for this project, and their relevance should become apparent shortly.

The issue of whether "complexity" refers to phenomena or method is reflective of interdisciplinary scholarship more generally, but this issue is not a problem for my project. Within the interdisciplinary studies literature, complexity is taken to refer to two different targets: either the phenomenon itself or the knower's practices (McMurtry 2009).[13] In other words, sometimes "complexity" is used to describe the object of

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[13] Like "interdisciplinarity" itself, "complexity" boasts a variety of definitions both in and beyond the interdisciplinary studies literature. There are a number of similar but different formulations of complexity theory employed throughout a wide range of academic areas, and this can make it difficult to identify and assess its implications. In a review of complexity theory from a wide range of contexts, Steven Manson (2001) draws several helpful distinctions. "Algorithmic complexity" refers to a mathematical context based on information theory and addresses the problematic of mathematically representing complex systems (405). "Deterministic complexity" is closely related to chaos theory and deals with the interaction of variables based on simple rules that can lead to large scale stable web-like systems that are highly vulnerable at their densest connective nodes (405). "Aggregate complexity" deals with the interaction and

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investigation and other times it is used to describe the process of investigation. A complexity lens can sometimes help to expose various aspects of complex phenomena, and sometimes it helps explain "disciplinary boundaries and interdisciplinarity in terms of the sociocultural dynamics among the 'knowers' doing the studying" (6). In this framework, complexity is employed as a means of exploring the social interactions such as communication, competition, or cooperation, for examples, which can be seen as emergent properties that arise from dynamic discursive relationships, but are not reducible to individual entities. Angus McMurtry (2009) points out that each approach has certain benefits, and though the two are generally utilized in distinct ways, a more fruitful form of interdisciplinarity would integrate the two, and this is precisely what I intend to do in the strategic interdisciplinary approach that I will develop in the following section.

Complexity thinking as employed in this work is adopted as a means of "seeing" the living world—its organization and dynamics—and in this way it provides a helpful metaphor, as Klein (2001) suggests. Although there are a variety of ways in which complexity theory has been taken up in the humanities and social sciences, Chettiparamb (2013) suggests a framework of "generalized discourse" as a basis of widely applicable use (7). Systems can be understood as "any two or more *interacting* components" of which the components and the interactions can "also be recognised as an entity with respect to a larger whole: the 'environment'" (Chettipraamb 2014, 8 emphasis in

synchronization of multiple elements that produce complex systems with emergent properties—such as system specific behaviors (405). "Most importantly, all three kinds of complexity are concerned with how the nature of a system may be characterized with reference to its constituent parts in a non-reductionist manner" (406). This being said, it is primarily the aggregate theory of complexity that is most relevant here and does not reference a mathematical concept in any intentional way.

original). A boundary, either open (material, energy, and/or information is exchanged between the system and its environment) or closed (a static relationship between the system and its environment), demarcates the system from its environment (6). Also key to the system is the observer (7): the clouds may be a jumble of shape-shifting wildlife to the lazy summer afternoon gaze but a complex system to the environmental scientist interested in the various elements of their constitution and their role in the atmospheric system. The cognitive investments of the observer, as Welch (2007) suggests are, in this case, significant. Chettiparamb (2013) also notes that "systems can be material (e.g. the ecology), conceptual (e.g. theories) or semiotic (e.g.texts)" (7).

Complex systems are nested systems of relationships, or webs of interaction that develop through the process of self-organization. Webs, which may be seen as consisting of individual systems or individual entities, cohere into larger systems: they self-organize into complex adaptive systems generally conceptualized as networks (Barabasi 2003). For example, cells interact to form an organ, organs interact to form a body, bodies (at this level now understood as people) interact to form communities, and so on (Woodill 2009). This nested structure or web-like systems constitute complexity.

The origins debate, as this dissertation proposes, is not simply an issue of material causation, or the history of the material world, or the ideological beliefs of some religious groups. Disciplinary approaches have addressed these elements and found little of interest in this topic, but monodisciplinary approaches tend to focus more narrowly on individual elements of phenomena and miss the bigger pictures. It is the "bigger picture" that provides a view of various relational patterns of elements and variables that span disciplinary boundaries.

2.4 Strategic Interdisciplinarity

In the previous section I explained why I use interdisciplinarity as the general framework for this project. I also explained that within the interdisciplinary studies literature complexity theory is helpfully utilized to conceptualize interdisciplinarity. In this section I propose the concept of strategic interdisciplinarity to encompass complexity as both object and process. To do this, I will consider strategic interdisciplinarity in the contexts of method, object of inquiry, and emergence (i.e., the thesis or finished product). In this way, it should be clear that for this project, interdisciplinarity must be wide-ranging and flexible—it must be strategic.

2.4.1 Strategic Interdisciplinarity in Process

The research process itself can be helpfully understood as a dynamic complex adaptive system, particularly when research is conceived of as a learning process. Brent Davis (2004) describes complexity (science) as: "the study of adaptive, self-organizing systems—or more colloquially, the study of living systems—or, more educationally, the study of learning systems" (211). "Learning," in this context can be understood as a type of self-organization—a type of grassroots organization that develops from communication or interaction between entities in close proximity—with each other and their collective environment. In the case of this dissertation, the "entities" can be understood as such things as the texts, concepts, ideas, and the interdisciplinarian (i.e., me).

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These communication processes are described as feedback loops. Positive loops amplify and negative loops restrict the development of a system. As I interact with texts and ideas in repetitive and reflexive ways, new insights emerge that can then be fed back into the research (read: learning) process. In this way, the research process is a dynamic, spiraling excursion that communicates a journey as much as a destination (Alhadeff-Jones 2013).

Strategic interdisciplinarity involves a degree of unpredictability, but it is not stochastic. Learning, the emergence of new insights, stems from causal interactions, even if causal mechanisms are inaccessible.[14] Complex systems are driven by both positive and negative feedback loops. Positive feedback loops push a self-organizing system's development to a critical point at which novelty—a movement, an organism, a pattern—appears. This is called "emergence" (Waldrop 1992, 152). Learning is guided by a set of parameters, natural laws, common interests or values, or any other element that directs the interaction of entities (Gleick 1987). The guiding element(s) or limit(s) of a system is sometimes represented as the "strange attractor" (Gleick 1987, 140).

In this project, the "strange attractor" or the guiding principles are my interests and concerns: my guiding question(s) about the implications of ID for gender and sexuality. Interactions are governed by the structure of the system which is an in-the-moment embodiment of its history—its process of development. Thus, my interactions

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[14] What I mean to say can be illustrated by the following example: I could flip a coin and that coin could land on 'heads.' The reason why it would land on 'heads' rather than 'tails' depends on various starting conditions such as the way it was placed on my finger, the amount of forced used to flip the coin, perhaps the degree to which I turned my hand as I flipped, and who knows what all else. The coin flip is not stochastic, it is not uncaused; however, it is virtually impossible to specify what all the variables were in that toss let alone come up with reasonable measurements thereof. Causation is there, but the details are largely inaccessible.

with texts, concepts, ideas, and so on are governed by my structure, or my historical

process of becoming—that shapes my interests and capabilities. And so the sources

selected and the ideas pursued are determined by my interaction with the texts of this

topic—which is in turn determined by what texts, ideas and concepts are available in my

travels.

2.4.2 Strategic Interdisciplinarity and the Object of Inquiry

Strategic interdisciplinarity refers to the object of inquiry as well as a

methodological approach. Strategic interdisciplinarity is a methodology that is driven,

shaped and constrained by the research question(s), the resources available, and the

interdisciplinarian. The research question(s), however, can also be thought of as a

complex adaptive system that involves multiple levels. In this case, the distinction

between complexity as process and complexity as phenomena is somewhat arbitrary

because one entails the other. In other words, a complexity problem requires a

complexity approach and differentiating between the two is a matter of perception.

The object of investigation in this project is the relationship between ID and

sexual politics, and it is multi-layered and multifaceted: it is complex. On one level, there

appears to be a degree of stability in creationist ideas as they developed over time, as I

show in Chapter Three by looking at what I have called an "antievolution methodology"

that emerged from this movement and is embodied in ID. One can also zoom in to look at

ID more exclusively as a sub-system at a different level. In this picture we can see what

types of relationships are enacted between ID advocates, their audiences, and their texts,

as I do in Chapter Four by examining the function of science in ID discourse and showing

how it is used as an instrument of influence and persuasion. My object of inquiry involves looking broadly at antievolutionism at one level, then more specifically at the ID movement on another level, and then at the epistemological framework of ID theory itself in Chapter Five. The patterns identified at the historical level come into focus much more acutely in the movement between levels because what becomes crucially apparent is that ID does not have a scientific agenda, but is driven by a political agenda. It is not until Chapter Six, once these pieces are in place, that it is feasible to inquire into the nature of that agenda, and so gender and sexuality is relatively absent from the discussions until this point. However, the view from each level enables me to support the central claim of this work: ID is largely concerned with policing gender and sexuality and not asserting the facts about origin(s) of the cosmos and the entities within it.

Complexity thinking is also appropriate for this project because the complex system I am interested in, the relationship between ID and sexual politics, is not found in a single knowledge domain. A key aspect of interdisciplinarity as it is used here involves a wandering or moving between perspectives or levels. While the overall trajectory is towards a discussion of specific translations of ID into political action, the path is somewhat curvy because the object itself is somewhat curvy. This project takes the origins debate as a truly complex system and adopts a migratory tactic to explore its various dimensions.

2.4.3 Strategic Interdisciplinarity and Emergent Insights

The final product of this project, the thesis itself, is best understood as the emergent property (or "properties") of the strategic interdisciplinary process. The

emergent pattern can be understood as a visual or conceptual representation of the system's strange attractor. This thesis is marked by the strategic interdisciplinarity in several ways: the parts, the tensions, and the tools. Let me explain.

Emergent properties are properties of the whole that stem from relational perspectives and so are not visible in the individual elements of the system. This is not to say that entities are not individuals, but rather, it is to say that entities are not isolated, reducible, or abstract. Entities are highly entangled in webs.

This thesis will contain several "parts" that are best understood from an overhead perspective. Though each part contains something of value in and of itself, one cannot see how it pertains to the overall argument on its own. For example, in Chapter Three I examine the roots of antievolutionism. The connection to sexual politics is not obvious in that chapter. I do, however, make a case for the development of a robust antievolution methodology as being at least somewhat responsible for the persistence of antievolutionism in the face of increasing evidence for evolution. Thus, Chapter Three may be interesting on its own, but it is its contribution to the process of lifting the veil of science in ID discourse that connects it to the issue of sexual politics that I discuss in later chapters and is a main concern of this project. It is therefore important to be simultaneously mindful of both local and global viewpoints.

Emergence happens under a set of specific conditions or tensions. Emergence is said to be most abundant at "the edge of chaos" (Waldrop 1992, 11), which is to say that that novelty and discovery are most active when there is a mixture of randomness and order. Order is provided by the physical or material configuration (and consequential limitations representable as the strange attractor) of the system and chaos is provided by

an abundance of possibilities available to said system. Together, the two lead to new and creative things.

Within a strategic interdisciplinary approach such that I propose here, insights emerge from the interested and informed wandering of the interdisciplinarian. Simeon Dreyfuss (2011) argues that interdisciplinary work requires several important skills on the part of the interdisciplinarian. These skills include being able to think relationally, which he describes as "holding in relationship different ways of knowing" (67). The more I wander in this topic the greater the resources I encounter and the greater the potential to "discover" something new.

One prominent tension saturates this project: there is an element that seeks change and redress of the influence of ID on the political cultural front, but there is also a resignation that such resolution is idealistic and unreasonable thus seeking some means of living with the problem, so to speak, is the best guiding principle. Dreyfuss (2011) suggests that holding such tensions, contradictory feelings, an assortment of notions and ideas about phenomena, is key to interdisciplinary work. This project then, does not seek to move in spite of the tensions, but it seeks to utilize these tensions to build conceptual bridges and germinate explanatory richness.

The strategic element, apart from the political concerns, is in the selection of academic tools to help me develop and articulate insights and perspectives, and so this thesis is a process. The selection is determined by tools or bodies of knowledge that I already know and that already comprise my epistemic history, the resources available, and my ability to use them. There are numerous lenses that I will have "tried on" throughout this process and consequently discarded. While certainly not the most

economical approach in terms of time and energy, it is extremely productive, and the things that will be pruned away might well be understood as being as constructive as the elements that will be retained. Strategic interdisciplinarity in action then, at least for this project, can be seen in the mix of academic areas upon which I draw.

Strategic interdisciplinarity is in some ways a scattered methodology, and the tools that I use are an eclectic mix, but the finished product, the thesis itself, is not merely a subjective rendering of the object of interest. By drawing on a wide range of tools, I engage a cloud of witnesses, so to speak, in that I examine and look from a variety of situated locations. Feminist epistemologists often suggest that objectivity is not accessible in an isolated view from nowhere but rather is achieved incrementally by the incorporation of a diversity of perspectives from a variety of locations. Donna Haraway (1988) writes that "rational knowledge is a process of ongoing critical interpretation among 'fields' of interpreters and decoders" and that "the only way to find a larger vision is to be somewhere in particular" (590). What binds the disparity of perspectives is that they are representative of the strange attractor that emanates from my overarching question and sub-questions, and which roughly equates to my "somewhere in particular." Taken together, the process, the phenomena, and the product forcefully show that ID is powerful tool for policing gender and sexuality. The subjective element is most prominent in the fact that I believe this is an important issue to address.

2.5 Academic Tools Used

It is important to note that the disciplinary perspectives and academic tools I use are not clear-cut and discrete. Rather, there is a great deal of overlap and interconnection.

That being said, the following is a general overview of some of the specific areas of importance.

Feminist Theory: Feminist Theory is the principal framework that guides this project. As such, it is utilized as a domain in its own right and in conjunction with other academic areas from which I draw. This project was motivated by an observation that many of the forums upon which ID advocates are engaged also host numerous elements of familiar CR discourse. For example, interspersed throughout the various ID-related articles and websites is a plethora of anti-abortion rhetoric, anti-feminist sentiments, and much explicitly homophobic content.[15] The questions that I began to grapple with, almost immediately, were: Why am I finding this repeated pairing of ID with issues of gender and sexuality? How are these two seemingly disparate topics connected? Further investigation brought to the fore a number of tensions: It seemed strange that this "science," as sophisticated and "scientificish" as ID seemed, was rejected by and largely unplugged from most of the mainstream scientific community. It seemed strange that ID advocates were challenging scientific authority yet attempting to harness it for their own project at the same time; it seemed strange that ID "science" was coupled with an apparently conservative social agenda; and it seemed strange that proponents of ID, a supposedly scientific matter, were promoting public policies consistent with the ideals and objectives of the CR.

The reason that the pairing of ID with gender-sexuality caught my attention was in no small way due to a feminist perspective that I endorse. As a feminist observer there

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[15] "Homophobic" can here be understood in comments that suggest that homosexuality is unnatural and/or morally wrong. A generic definition of "homophobic" as "prejudiced against homosexual people" is sufficient here. http://wordnetweb.princeton.edu/perl/webwn?s=homophobic. Last accessed July 8, 2014.

are some intellectual orientations that I favor over others. For example, I hold it to be true that Western societies have historically entailed a system (or systems) of oppression structured by an ideology of the supremacy of white heterosexual masculinity that structures conceptual, material, and social realms. This ideology renders a set of norms and values that privilege those who fit within and adapt to the dominant framework and proliferates a supposedly common sense or self-evident understanding of an irreconcilable differences between the sexes (among other axes of differentiation). This difference is often understood as a natural phenomenon that cannot (and often should not) be modified. Feminist sensibilities challenge this "normalcy" in numerous ways, including showing ways in which other states of affairs are possible and indeed more desirable. In relation to the problem at hand, my quest to bring out the said connections in ID is shaped by the values bound up in feminist ideas that spurred (and spur) me to challenge and resist the oppressive or potentially oppressive (conceptual and/or material) states of affairs.

Religious Studies: ID is typically associated with evangelical Christianity even though ID proponents are adamant that ID is not in itself a religious theory. A religious studies perspective allows me to query if and how ID might be understood as a religious doctrine apart from the protestations of advocates. Furthermore, a religious studies perspective allows me to comment on the mechanics of religion that become apparent. In this view we can see how and why ID makes sense in a Christian context, which allows me to dampen the adversarial structure of this discourse somewhat and gain a more nuanced perspective.

To the extent that ID is a religious concept, as I will attempt to show, this dissertation is concerned with the role of religious belief manifest in the expression of religion as science and extended to the construction of public ideas and policy in regards to gender and sexuality. Undergirding this is a concern with the history of the subordination and oppression of women under traditional Judeo-Christian social structures and what appears to be a bid by contemporary CR organizations to undo progressive political achievements. Closely connected is a concern with threats to advances in the acceptance of sexual diversity posed by these same organizations. Given this orientation, any theory—scientific or otherwise—that purports to have something to say about the nature of gender and sexuality will typically inspire a critical view, and so for me, any inquiry into ID entails not just a feminist lens but also a religious studies lens.

Epistemologies of Ignorance: At an earlier stage of my academic career I had the great fortune of encountering a nascent body of literature collectively referred to as "epistemologies of ignorance," and this framework, already in my academic toolbox, is very helpful for this project. I am concerned with the ways that oppression and domination structure power relationships in specific contexts and the role of knowledge in these relationships. In other words, within the context of ID, I am interested in how gender plays into the construction of ID theory as knowledge, how the balance of power is conceptually structured, and what the actual impact of this balance might be. The epistemologies of ignorance literature explores the ways that knowledge is pro-actively ignored—excluded, marginalized, discredited—as a means of creating and reinforcing dominance. Using an epistemologies of ignorance framework, adapted for my needs in this project, I am able to show, by looking at the dynamics of epistemic authority in this

discourse, the ways in ID theory itself furnishes a conceptual framework conducive to motivating and managing a powerful collective.

Sociology: In ways similar to sociological approaches in general, or what is sometimes called a "sociological perspective," (Anderson 2012, 5) the feminist perspective utilized here asserts that the norms and taken-for-granted understandings of the world are not natural in any straightforward way. They are neither inevitable nor universal.

The social construction of knowledge is enabled through discourse, which is to say that the status quo, or the commonly accepted understandings of the world, is produced, reproduced, reinforced, negotiated, and contested in the relationships between people, practices, institutions, identities, texts, and talk (Lazar 2007, 144). One might think of discourse as fields of influence and organization, such as the law, governance, family, church and media (Weedon 1997, 34). The utilization of this perspective allows me to explore the connections between the ways in which gender and sexuality ideology is manufactured in the claims that ID advocates make.

A social constructionist epistemology has been a very productive framework for feminist theorists in their quest to challenge gender ideology that has long sustained imbalances of power. Samantha Frost (2011) writes that constructivism has been the impetus for seeking the social elements of knowledge claims, "a quest not simply to identify the social, linguistic, or cultural dimensions of perception but also to specify the social and political relations, negotiations, and practices through which both subjects and objects of knowledge come to be constituted as such" (74). In other words, feminist scholarship has been very good at exposing the ways in which things that are considered

to be normal and natural have been built up over time by the ways we conceptualize or understand the world and the ways we act in accordance with these understandings. In this way, focusing on whether or not the claims that ID theorists make are true or false in a scientific way distracts us from focusing on how this idea was/is constructed and how it functions as an element of a social power that simultaneously assumes and prescribes a constrictive biological essentialism as the basis for an ambitious political agenda.

A sociological perspective also provides some pragmatic tools for this project. Though the bulk of this work comes from wandering and scavenging, and I place my approach within a complexity framework, I at times turn to a type of content analysis approach for organizing and presenting this project. Content analysis is typically a qualitative research methodology that is generally utilized in the social sciences. In this approach, various items such as texts, ideas, events, activities of the group or entity being considered, or forms of communication and/or social activity, are the objects of analysis—the data (Berg and Lune 2004, 240). The process involves looking at data for recurrent instances of whatever issue the research is concerned with (Hsieh and Shannon 2005). In this case, I make my way through and around ID material including key publications about ID, material by key ID theorists, websites, blogs, and many secondary sources, both academic and general. I also collect relevant mainstream media bits. Very often, my travels are directed by following links on websites. I utilize these items as sources for my analysis of ID discourse. Throughout, I am concerned with where the item comes from, what the item says (implications and assumptions, for example), and who the intended audience is (Berg and Lune 2004, 243). In this way, I pull together observations relevant to the interests of this project.

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History: In this project I utilize an historical approach in Chapter Three. I utilize this approach in order to establish the roots of ID and give context to various elements specific to ID that I address later. The historical process in this work draws mainly on the narratives that have already been told about early antievolutionism, but it repositions them in order to articulate the ID ancestry more explicitly.

2.6 Conclusion

In this chapter I have endeavored to lay out my approach to this project. I began by reviewing the relationship of my topic to key disciplinary domains in order to show that that these domains hinder my inquiry. I posited that interdisciplinarity provides a space that is helpful for sidestepping disciplinary constraints, and further proposed strategic interdisciplinarity as a means of accessing the gaps created by the disciplines. I identified the use of complexity theory in the interdisciplinary studies literature and expounded that theory to formulate strategic interdisciplinarity. In other words, I identify the complex nature of the object of inquiry—the relationship between ID and sexual politics, and suggested that this relationship can be made apparent by weaving together various academic tools. Finally, I introduced a number of the tools that will be used in this project.

The concept of strategic interdisciplinarity is best understood as pertaining to the process, the phenomena, and the product. This is to say that the concept of strategic interdisciplinarity is intended to portray the notion that complex and curvy objects of inquiry require complex and curvy approaches, and the insights that result, the emergent

properties, will itself be a complex product. What emerges from this process will not be entirely predictable, but it will be novel.

CHAPTER 3 THE HISTORICAL CONTEXT OF

INTELLIGENT DESIGN

3.1 Introduction

One of the first things one notices in the ID material is that it involves a strong antievolutionism. For example, a majority of books that explain ID challenge the theory of evolution in the titles and/or the images on the front covers (see Section 4.3 and Figure 3), and so it seems to me that an exploration of antievolutionism is a sensible place to officially start this strategic interdisciplinary journey. ID may be rather new, but antievolutionism is at least as old as Darwin.

In the previous chapter, I explained strategic interdisciplinarity as a type of wandering that is shaped and constrained by my guiding question(s) or my object of interest. I also explained that the object of interest is multi-layered, and this chapter constitutes one such layer. Let me explain how this chapter fits into this framework.

The object of interest for this project as a whole is the relationship between ID and sexual politics, but to get to this relationship, one must first get a sense of each of these elements. A good deal of work has been done by scholars on each of these elements, and I might just as well have started by delving into the history of sexual politics, but for a myriad of reasons, not the least of which is that the academic program in which I am situated has brought me into an academic relationship with other scholars and scholarly communities well versed in evolutionary theory and thought, I begin with ID. More specifically, I begin with the antievolutionism of ID, because to me, it is the most obvious feature.

In focusing on one element of this relationship, ID, it is necessary to level-jump, or to shift focus from the broad overarching object of interest to a narrower one: the connection between ID and antievolutionist thought. This narrower focus should help to provide a sense of what ID is all about. This narrower object of interest might well be approached in any number of ways. The approach utilized here, the strategic interdisciplinarity that I employ, is shaped and constrained by my own interested wandering, the resources available (such as my advisors, the available literature, and academic authorities on the subject), and my abilities to draw on these resources in such a way as to produce a coherent and insightful chapter that will provide purchase on the main object of interest—the relationship between ID and sexual politics. By getting a better understanding of the connection between the antievolutionism of ID and the history of antievolutionism, we should gain some insight into what ID is all about that will in turn help to elucidate the relationship of ID to sexual politics.

I have explained in the previous chapter that strategic interdisciplinarity is reified in the product (or this chapter, in this case), and the product is helpfully understood as the emergent properties of my process or my interactions with my resources. This chapter utilizes a rather general historical approach, but I began by exploring a wide variety texts and historical sites of interest pertinent to antievolutionism. For example, at one point, I began to examine connections between early antievolutionism and the women's movement, but while this was interesting, the historical resources available in this regard are thin and not well fleshed out, so I have chosen (prompted by the lack of resources) to utilize the historical narratives already in circulation. I could have undertaken a project to ameliorate the historical record, but that would have been itself an arduous task and quite

a different project (to which I may turn my attention in the future). This chapter, however, has emerged from the pruning of the diverse resources that I encountered. This pruning has taken place in conjunction with a number of influences such as my network of academic advisors, colleagues, and personal insights.

Since the publication of Darwin's *On the Origin of Species by Means of Natural Selection* (1859) to the present day, evolution has been the focus of intense critique, though early response from the scientific community was largely negative, since the Modern Synthesis, it has enjoyed widespread acceptance within most scientific communities. The literature thus far has primarily centered on the polemics of this critique—why it fails or succeeds and whether such critique is scientific or religious. Less attention, however, has been allotted to considering the persistence and robustness of antievolution sentiments despite the overwhelming evidence for the validity and utility of evolution within the biological sciences.

Antievolutionist thought that emerged in the early part of the 20th century and continues in the present is not really about science at all, at least not in a conventional sense. Its durability is largely attributable to the enormous resistance to evolution by Christian evangelicals that morphed into a highly effective antievolution methodology. In this chapter, I seek to show the development of this antievolution methodology and expose the historical continuity of ID with earlier antievolution initiatives. Showing this continuity will allow me to highlight the social dimension that this methodology effectively hides under a veneer of science.

I begin the story of antievolutionism with reviews of Darwin's *Origin* by prominent members of the scientific community in the years following its publication. I

will refer to this body of literature collectively and loosely as "Darwinian-era critiques." These critiques supply the first element of the antievolutionist methodology: a repository of ideas about how to attack evolutionary theory. A good deal of this critique was severe enough that it looked for a while like Darwinian evolution would be discarded, but the story changes once genetics became an accepted and central aspect of biology more than fifty years later. While much of the Darwinian-era critique was inspired by religious concerns, some of the critiques were valid in the context of the understanding of biology at that time. The Darwinian-era critiques continued to be employed by religious objectors, however, particularly in the US. These objectors distanced themselves from much of the scientific activity that was transpiring and held tightly to the original objections. Darwinian-era critiques continue to jangle around in the antievolution toolbox. I sketch out this story in more detail in Section 3.2.

Next I consider the development of antievolutionism within a religious (Christian) context in the early part of the 20th century. I will refer to this era as "early antievolutionism." Darwinian-era critiques were often motivated by religious and ideological commitments, but these motivations became less obvious as scientists continued to challenge and refine evolutionary theory. Something rather different was transpiring in the social domain, however. Darwinian evolution was largely being taken up as primarily a social theory, and so antievolutionism, particularly within Protestant Christianity, focused on the perceived social implications. The antievolution methodology element that emerged here is the rather tacit substitution of a social theory for a biological theory. There is no clear distinction between biology and sociology in Darwin's theory as it did involve a major social element; however, early antievolutionism

foregrounds the social to the extent that it practically severs the two. The antievolution methodology of this segment involves a narrow focus on the social implications of the scientific theory of evolution. It accentuated the social and ignored the science. I sketch this story in more detail in Section 3.3.

The final element of the antievolution methodology that I explore developed from early antievolutionism and was adapted and refined by ID proponents. In an attempt to redress what many saw to be the negative implications of evolutionary thought on society and its threat to biblical moral authority, antievolutionists sought to re-insert biblical creationism into the US public education curriculum. This movement was met by constitutional challenges that prevented creationism from being taught in public schools because it was identified as a religious belief rather than science, and so creationists began to try to make creationism more scientific. "Creationism" generally refers to the first moves to present the Genesis story of creation as a scientific argument and "creation science" generally refers to a more developed form of creationism. ID represents a contemporary creation science, as we will see. The development of creation science was a gradual process shaped through a series of legal contests over the nature of science and the science of creationism. This is the short story of Section 3.4.

The purpose of this chapter is to show that ID has an antievolutionist heritage. This heritage has enabled the development of a robust antievolution methodology that can, at least to some extent, account for the persistence of antievolutionism in the face the substantial evidence for evolution. The methodology works well. What holds this methodology together is a primary concern with changing social and religious norms, and not scientific inquiry and discovery. This is important, because, as we will see, the social

and religious norms of ID advocates and subscribers often concern gender and sexuality. If one is entirely focused on the science question of ID, this connection might not be visible. In the next chapter, I delve into the details of ID theory more substantially.

3.2 Darwinian-era Critiques and the Seeds of Antievolutionism

In this section, I review the introduction and development of evolutionary theory within the scientific community from the mid-19th century to the early years of the 20th century. Darwin's theory of natural selection met with harsh criticism at the time of its introduction and was almost discarded completely at the turn of the century, an important juncture in the history of biology. It was not until several decades later that evolution took its place of prominence within the scientific world.

The Darwinian-era critiques supply the first element of the antievolutionist methodology: a repository of ideas about how to attack evolutionary theory. I have categorized this repository into three main areas of concern: methodological, theological, and biological. Darwinian-era critiques tended to involve, what I will call, a "doctrine of certainty," which is a commitment to the pursuit of knowledge that could be "proven," and Darwin's theory seemed to challenge this doctrine. As such, a number of respondents rejected Darwin's methodology as speculative and its social-political implications as dangerous. Furthermore, a number of respondents pointed out some serious biological problems with Darwin's theory of natural selection.

Darwinian-era critiques are reprised in contemporary ID. Many of the technical biological issues were reinvigorated in successive contexts, but though the earlier renditions had scientific validity at the time, they were addressed within the scientific

community and are no longer valid in the contemporary scientific context. Furthermore, critique from the scientific community of the Darwinian-era was responsive (reluctantly, perhaps) to the evidence and discourse of science, but antievolutionists that draw on these outdated critiques are not, a trend that becomes apparent in contemporary antievolutionist methodology as it involves a "scientific" critique of evolution, but is very much detached from the scientific enterprise. Antievolution methodology involves the use of scientific authority without scientific content.

3.2.1 Darwinian-era Critiques: Methodological

The introduction of Darwin's *Origin* garnered significant attention, selling out on the day of its release (Browne 2006, 1).[16] Evolution, a general theory of the transmutation of species, had had previous hearing in the works of naturalists such as Jean-Baptiste Lamarck (*Philosophie Zoologique* 1809) and Robert Chambers (*Vestiges of the Natural History of Creation* published anonymously in 1844), but it was met with great resistance by the scientific community of Darwin's era (Browne 2006, 84). Among other things, critics argued that Darwin's work was not rigorous, was speculative, and contradicted accepted understandings of the world at that time. Although the original idea of evolution cannot be attributed to Darwin, he did introduce natural selection, a theory of the mechanism of evolution, and its companion thesis of common descent. Darwin's

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[16] It should be noted that Darwin delayed publishing his theory for quite a few years, but made a hasty decision to publish when he received a paper from Alfred Russel Wallace that contained a very similar set of ideas (Browne 2006, 58). Darwin's and Wallace's papers were presented together at a meeting of the Linnean Society of London, and published in their journal shortly thereafter (59). Some scholars have suggested that Wallace might have been denied due credit for evolutionary theory by the dual publication (60). The discovery of Wallace's paper compelled Darwin to publish quickly, and thirteen months later, *Origin*, a decidedly smaller manuscript than what Darwin had originally intended, was released (66).

esteemed stature in the scientific community coupled with the controversy and criticism that surrounded previous theories of evolution likely help to explain the hubbub that greeted the publication of *Origin* (Browne 2003).

Darwin was expecting a harsh reception of his work from those factions concerned with the implications of the theory for the history of humanity, the role of nature, and the foundations of morality, but he was surprised at the ways in which his methodology was challenged and found wanting (Hull 1973, 6-7). Darwin's theory was painted as methodologically unsound. According to reviewers: it was "—not based on a series of acknowledged facts pointing to a *general conclusion*, —not a proposition evolved out of facts, logically, and of course including them" (Sedgwick [1860]1973, 159); "the chief arguments used to establish the theory rest[ed] on conjecture" (Jenkin [1867]1973, 338); and his theory contained a disparity between the premises and conclusions with "the premises being so prudent, so just, and so limited, and the conclusion on the contrary appearing so extremely speculative" (Pictet [1860]1973, 143). Arguably the most notorious comment came from John Herschel who, according to Darwin, said his theory was a "law of higgledy-piggledy" (in Hull 1973, 7). To many, Darwin's work was simply not scientific.

This criticism reflects a controversy-ridden discourse concerned with the proper way of "doing" science that was taking place at the time of Darwin. When Darwin published *Origin*, the general consensus among scientists was that proper scientific methodology was inductive, but what counted as "inductive" was the keystone of the debate (Hull 1973, 16-36). There was generally an agreement that a rigorous standardized scientific methodology was necessary, but the discrepancy in how this was to be

established was marked by the differing positions of William Whewell and John Stuart Mill. According to Whewell ([1830] 1989), proper inductive method involved the development of a theory or "*explanation*" of a phenomenon based on observation of "antecedent phenomena, or causes" and then the seeking out of relevant facts and/or analogous phenomena against which the theory can be tested (144). In contrast, Mill suggested that a truly inductive approach begins with the art of assembling facts or premises ascending to an accurate encompassing theory. He writes about reaching such theory that "success is here dependent on natural or acquired sagacity, aided by knowledge of the particular subject and of subjects allied with it" (Mill [1843] 1950, 172). The question was: Should the battered triangle remain poised on its apex or stand at attention on its base? Meaning, should the scientific method begin with a single hypothesis (the point of the triangle) and proceed towards the accumulation of facts and figures to support/disprove the hypothesis, or should it start with the collection of facts, figures, and the like (the base of the triangle) and move toward a single statement of fact or theory? The debate, according to Hull (1973), was decided in favor of Mill, but Darwin's approach was neatly couched in the middle and seemed to satisfy neither.

The strength of Darwin's argument was based on a "consilience of inductions," sometimes referred to as "an argument to the best explanation" in contemporary discourse (Ruse 2006, 37). Regardless of what his methodological approach was—inductive, deductive, or a combination of both, the key point is that its power as a knowledge claim resided in its explanatory capacity. Darwin saw his theory as likely true because it offered a unifying explanation for a wide array of phenomena in areas as diverse as "instinct, paleontology, bio-geographical distribution, systematics, anatomy,

embryology, and more" (Ruse 2006, 38). Darwin himself writes that "it can hardly be supposed that a false theory would explain, in so satisfactory a manner as does the theory of natural selection, the several large classes of facts above specified" (1882, 421). So while Darwin did not dispute that his theory was not completely proven, he did attest that it was probable.

On another level, however, critique of Darwin's methodology reflects a philosophical challenge to the doctrine of certainty that pervaded (and seems to still pervade) Western thought. David Hull (1973, 16) argues that Darwin's methodology was dismissed as speculative not because it failed to meet the standards of proof as established by the philosophers of science at the time, but because the standards were such that no theory could compel the level of certainty that the standards demanded. For Hull, the induction debate was a facade for the more crucial issue of "the quest for *absolute certainty* in the acquisition of knowledge," and harkens back to the long-standing essentialist doctrine that asserts that there is an absolute reality present in the material world accessible only by a rigorous methodology (1973, 17). Hull writes: "Bacon, Herschel, and Mill attempt to eliminate it [uncertainty] by trying to make inductive inferences more rigorous, Aristotle by recourse to intuition, and Whewell by reference to self-evident truth" (19-20). Although the dispute as to what counted and what did not count as a valid inductive method continued, the pillars of the philosophy of science concurred that uncertainty was unacceptable. Evolutionary theory undermined the entire essentialist doctrine by proposing a worldview in which "things" are processes and not individual discrete entities, which was a big leap from the geometric and mechanistic worlds of Newton and Bacon (69).

In this vein, Darwin incited debate not only in regards to scientific method and probability/certainty, but also in regards to ways his work challenged the seemingly obvious understandings of the natural world. Natural Theology, which posits that the natural world conveys knowledge of the Divine, was the main framework within which natural science was conducted. In this framework, evident function and order conveys knowledge of God (McCalla 2013, 12). The teleological argument (sometimes referred to as the argument from design and often associated with William Paley), draws on essentialist philosophy with the premise that when purpose or function is detected, then based on what is known about the design and construction of human artifacts, the logical inference is that significant foresight was required and therefore the necessity of a designer is implied. Consequently, when one looks around at the very specific and delicate harmonies abundant in the natural world, one need not merely assume a creator but is provided with a window on his character (Hull 1973, 56).

The argument from design figures prominently in reviews of Darwin's theory. Frederick Wollaston Hutton ([1860] 1973), for example, writes that "the beautiful perfection of our bodies—the wonderful adaptations in the forms of animals to render them efficient for their purposes of like seem so skillfully planned, that it is impossible to regard them as effects of chance, and not as inapproachably perfect designs" (300). Karl Ernst von Baer's review ([1873] 1973) asserts that "it is self-evident that nothing useful and significant could ever result from chance events" (419), and in arguing for the acknowledgement of "the intervention of an intellectual power in the diversity which obtains in nature," Louis Agassiz ([1874] 1973, 441-4), argues that variations that deviate too far from the narrow path of standard embryological development are regularly met

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with degeneration and/or sterility thus natural selection is exceedingly far-fetched. For many, intentional design was the only viable thesis.

In contrast to the argument from design, the theory of natural selection proposed only the possibility of development, the probability of maldevelopment, and no advance guarantee of successfully achieving a living world at all. To many, the theory seemed to be little more than the deceit of the serpent that was propositioning one to take seriously the ridiculously staggering odds of the coming to pass of such a vastly complex world.[17]

3.2.2 Darwinian-era Critiques: Theological

In a very general characterization, natural selection in Darwin's theory implied a mechanism of struggle and competition that became the basis for the theory of common descent. As Darwin explains: "The most vigorous individuals, or those which have most successfully struggled with their conditions of life, will generally leave most progeny. But success will often depend on having special weapons or means of defense, or on the charms of the males; and the slightest advantage will lead to victory" (1859 Kindle Edition, 470). Darwin argued that the origin of species be understood as a tree that, through the process of mutation and selection, branched as successful competitors led the development of species in different directions though starting from a common ancestral source. Many critics found the idea of common descent to be particularly offensive and it inspired sharp criticism. These criticisms focus on the materialist nature of the theory and its implications for the natural order and morality. Taken together, this critique voices

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[17]One counter argument to this statement is that any state of affairs would garner the same (or lower) degree of probability, and that the cosmos are ordered in one way and not another, from a statistical perspective, says little or nothing about the possibility of design.

concerns of the possible impact of Darwin's theory of species on humanity and its theological heritage.

Embedded in these critiques is a strong discomfort with materialism inherent in the theory of natural selection. Part of the Darwinist package was a fully naturalized account of humanity that did not necessarily concede the need for a supernatural creator and governor. Natural selection contradicted the biblical narrative of special creation, untethered biology from natural theology, and more broadly, it challenged the necessity of God in explanations of the natural world (Hull 1973). Not surprisingly one finds those with a "deep aversion to the theory; because of its unflinching materialism;—because it has deserted the inductive track, the only track that leads to physical truth; —because it utterly repudiates final causes, and thereby indicates a demoralized understanding on the part of its advocates" (Sedgwick [1860] 1973, 164).

In bracketing off the supernatural from scientific explanation, Darwin's theory challenged the natural order that positions humanity at the pinnacle of all creation. For many, there was an obvious and undeniable canyon between humans and animals, and evolutionary theory would have to provide solid proof if it was to be accepted. William Hopkins ([1860] 1973), for example, argued that if natural selection is accurate then there should be evidence of intermediary forms between humans and other animals. He writes that "there exists at present an enormous gap between the intellectual capabilities of the lowest race of men to those of the highest race of apes...why should the creatures intermediate to them—exalted apes or degraded men—have been totally exterminated, while their less worthy ancestors have successfully struggled through the battle of life" (270)? St. George Mivart argued that if common descent is true then surely some mental

capacities at least comparable to that of humans should be visible in other animals.

Minimally, Mivart argued, the higher animals should exhibit such evidence, but they

simply do not ([1871] 1973, 381). Darwin would address this point in full force in his

later *Descent of Man*,[18] but the disparity was too obvious for these critics to justify

Darwin's thesis that humankind and non-human animalkind could be of the same ilk.

Darwin's theory, for many, was not only sacrilegious but simply ridiculous.

The impact of challenging humanity's place in nature directly correlates to a re-

imagining of the moral standards in play at the time. Darwin's theory undermined biblical

authority, so, to those committed to its tenets, it undermined the morality playbook so to

speak. It challenged the traditional Christian concept of human nature as an outgrowth of

the immortal soul that furnishes mental and moral capacities (Bowler 2009a, 128). It also

challenged the hierarchical partition between humanity and other species which, to many,

equated to a lowering of the moral imperatives of social order. Traditional Christian

views held that humans (man, to be more precise), were created in the image of God. As

such, they are naturally superior and were ordained to have dominion over the animal

kingdom. Challenging the divine origin of human nature lowered humanity to the rank of

just another animal. The accepted distinction between humans and animals had come into

question prior to the appearance of Darwin's theory, which was not unrelated to

developments in other areas of science (Oldroyd 1980, 285). It is widely accepted,

however, that it was Darwin's theory "that finally convinced most people of the essential

genealogical affinity of men and animals" (Oldroyd 1980, 4). I am not certain who the

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[18]Mivart (1871 in Hull 1973, 409) also paved the way for a version of theistic evolution that offered a distinction between mental and material worlds by arguing that the cognitive or mental is immaterial thus not subject to evolutionary laws. This preserved a place for the sacred in humankind.

term "most" quantifies, as there remains yet a fair bit of dissent, but certainly natural

selection unseated the necessity of a divine human purpose, and for many, threatened to

dispel the moral imperative to treat humans differently than animals. Darwin's theory

seemed to endorse the opening of the floodgates of immorality and social degradation.

In summary, Darwinian-era critiques, in general, address religious/theological

implications of Darwinian evolution, which indicates that the issue of Darwin's

methodology stretches beyond the mere mechanics of research and scientific discovery.

In his review, for example, Karl Ernst von Baer ([1873] 1973) echoed a charge that the

foundation of Darwin's theory is "a mire of mere assertions," and wrote: "I object not

only to the foundations of the Darwinian system but also to the conclusions and

embellishments which top it off. To be specific, the embellishments which I have in mind

are the cynical attacks on religious conceptions which invariably ornament the pinnacle

of the system" (418). In a number of ways, criticisms of Darwin's methodology were an

outcrop of broader ideological commitments, but even so, it is important to note that just

because ideological commitments motivate criticism, it does not necessarily mean the

criticisms themselves are ill-founded.

3.2.3 Darwinian-era Critiques: Biological

Thus far I have reviewed Darwinian-era critiques as they pertain to how Darwin's

work was done and the implications for the theological framework that traditionally

accounted for the status and nature of human beings. Along with these concerns was the

identification of some serious technical biological problems with Darwin's theory, which

continue to resurface even in the present day.[19] Darwin's theory received a fairly negative reception at first, and it took some time, debate, and revising before it was broadly taken up within biology. This section is not just a story of the theory of evolution: It is also a story about the history of biology. This story is significant to the development of antievolutionism because it is here where the Darwinian-era critiques begin to fall to the wayside within the field of biology. The seeds of antievolutionism may have been planted by the scientific community in the Darwinian era, but the sprouts are largely uprooted in the development of biology over the fifty years or so after Darwin's theory was published. For antievolutionism to persist, those that insist on the invalidity of evolution from a scientific perspective would have to detach from the world of biology.

I begin this segment of the story with an overview of some of the technical biological problems with Darwin's theory that were identified in the Darwinian-era critiques. I will then trace its rejection and reuptake within the realm of genetics that paved the way for its acceptance and application in other areas of biology. In this story, a number of criticisms appear that are specific to the scientific context at the time, but are no longer valid even though they, or versions of them, continue to get a hearing in later antievolutionist discourse. The point to be made in this section is that although biological and religious critiques were tied together, they separate over the course of the development of biology itself. Religiously-motivated critiques become less and less engaged with the happenings in biology.

Several reviewers posed formidable technical challenges to Darwin's theory. George St. Mivart ([1871] 1973) argued that organisms that are not fully formed with all

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[19]I have parsed these critiques into three categories for ease of explanation, but in the literature they are not separate and distinct but overlap and intertwine.

their parts intact, or organisms at incipient stages of development, would not function thus would not be a viable target for natural selection. Fleeming Jenkin's review ([1867] 1973), for example, drew on the theory of heredity that was prevalent at the time to argue that even if advantageous variations did appear in an individual, that variation would be blended with traits from the other parent and the significance of the trait would be diluted such that its benefits would diminish in a short time. Natural selection could therefore not work over any extended period of time to favor that trait (312). Furthermore, the blending problem notwithstanding, Jenkin argued that "the limits of variation" would permit change only up to a certain point. In other words, "reaction norms," the term used by Hull (1973, 348), constrain the degree to which a species can change; thus, natural selection is subject to the problem of diminishing returns, so to speak, such that even if variation does occur, true speciation could not (Hull 1973, 348; Bowler 2009a, 201). With the assistance of Alfred Russel Wallace, Darwin was able to argue that the issue of blending was a problem only at the individual level of selection; at the population level, one slight variation could be quickly amplified and natural selection could indeed operate (Bowler 2009a, 201). Bishop Samuel Wilberforce argued that in domestic breeding, it was very difficult to achieve new breeds capable of reproduction, let alone an entirely new species (Oldroyd 1980, 133). The limitation of species such as these critics suggested may indeed be a real problem of speciation, but Darwin pointed out that if species were in flux, or were dynamic as his theory posited, then the limit would always change granting opportunity for novelty that could lead to speciation (Bowler 2009a, 199). Even with these answers, Jenkin's comments inspired serious reconsiderations of Darwin's theory

that undoubtedly played a part in a turning away from Darwinian evolution in the early part of the 20th century.

Biologists struggled with the implications and empirical value of natural selection. The notion of evolution in a very limited sense was rather widely accepted, but full acceptance of Darwinism was resisted as scientists first reacted against the materialism of natural selection, the notion of purposelessness it endorsed, and later against its negative public image (Bowler 2009a; Larson 2008; Ruse 2006). Evolutionism itself was rather enthusiastically taken up, but by the turn of the century, most biologists had turned to alternative versions.

Darwinian evolution, it seemed to many, was a short-lived idea. German naturalist Eberhard Dennert (1904) wrote: "Darwinism will soon be a thing of the past, a matter of history; that we even now stand at its death-bed, while its friends are solicitous only to secure for it a decent burial" (28). To support this claim, Dennert enlisted agreement by citing a host of other scientists who discredited natural selection as purely mechanical and wrong. Many adopted a form of Lamarckism, the theory of the inheritance of acquired characteristics. To its credit, this theory accommodated the basic notion of evolution as a change in response to environmental pressures, but in contrast to the Darwinian version of evolution, Lamarckian change could be underwritten by moral purpose and orderly development (Bowler 2009b, 138). Anti-Darwinian Lamarckism refused the pervasive materialism that seemed to be packaged in Darwin's theory, and instead, many adopted an explanation of natural processes as infused with moral purpose (138). "Many of them [Darwinian opponents] were openly vitalist in their view of life, insisting that living bodies were animated by a life force that could produce purposeful

effects beyond the capacity of any material structure. To these thinkers, the Lamarckian effect was a sign that living things could control not only their own destinies, but also the future evolution of their species" (138). At the beginning of the 20th century, non-Darwinian evolutionary research programs were in full swing.

It is the development of genetic theory of inheritance, however, that dramatically intervenes in this narrative. August Weismann, one of the few exceptions to the anti-Darwinian revolt, introduced a major advancement in the theory of inheritance just before the turn of the century. Brandishing the evidence of some mutilated rats and their intact progeny, Weismann proposed a distinction between a trait and the material that transmits the trait (germ plasma, as understood at the time) (Bowler 2009b, 151). This was a big step that resembled an all-or-nothing theory of the inheritance of traits proposed several decades earlier by Gregor Mendel. Famously, Mendel's work was neglected until the work of biologists Hugo DeVries and Carl Correns granted it a place of prominence as a novel approach to inheritance around the turn of the 20th century (Müller-Wille 2012). This advancement, however, was not yet the catalyst for the acceptance of natural selection.

Early geneticists did not accept natural selection as a necessary theory for genetic inheritance. Thomas Hunt Morgan, for example, a leading figure in the early genetics movement, clearly partitions genetics from natural selection. In his *A Critique of the Theory of Evolution* (1916, 194) he argues that natural selection is but a representational statement of the "increase in the number of individuals that results after a beneficial [genetic] mutation." In other words, genetic mutation is the source of evolution and natural selection is little more than a probability heuristic. Saltationism, the leaps-and-

bounds theory of evolution, was another alternative to natural selection prevalent in the anti-Darwinist camp, and the all-or nothing concept of individual genetic inheritance, or "mutation" seemed to fit into this model. Darwin's theory of slow gradual change appeared to be slowly and gradually disappearing and it was not until several years later when the early geneticists were confronted by shortcomings in mutation theory and turned to population genetics that they began to reconsider the situation and adopt a group-based meaning of natural selection (Bowler 2009b).

The rejection of Darwinism by biologists at the turn of the century, geneticists in particular, differs from earlier dissenters in that their ideological commitments are not clear, or more appropriately perhaps, they are not coherent, thus cannot overtly account for their theoretical positions. In *Evolution and Adaptation* (1903), Morgan dismisses Darwinian evolution along with variations of Darwinian Theory. Bowler (2009a, 270) suggests that the moral implications of natural selection soured Morgan on Darwinian theory, and such may indeed be the case, but upon browsing Morgan's 1903 work and his later *A Critique of the Theory of Evolution* (1916), a concern with morality is not obvious, if at all present. Almost every criticism presented is followed by an explanation as to why mutation theory (the preliminary genetics theory) provided a more suitable answer. This suggests that Morgan is primarily concerned with clearing the theoretical path to allow for his new theory. His concern for morality, if indeed present, is banished to the background.

In the work of Hugo De Vries as well, ideological commitments are present but not pronounced. In his *Species and Varieties: Their Origin by Mutation* (1904), DeVries suggests the metaphor of the sieve to describe natural selection and argues that its utility

is limited to the selection of individuals to the status of advantageously fit within the boundaries of a single species. In this account natural selection is essentially the same as artificial selection which is to say that change and variation is possible but insufficient a cause to lead to speciation.

However, one detects hints of the design idea in DeVries arguments. He writes for example that "continuous or even prolonged improvement of a cultivated race is not the result of frequently repeated selection, but the improvement of the standard of appreciation" (1904, 808). It appears that DeVries does see changes in species as leading towards an ideal or predefined point as though endowed with an innate cause or function that is inching its way to full expression. The idea that life is continuously moving towards perfection, however, is much more subtly expressed than in the earlier Darwinian-era critiques. DeVries' statement is not followed by expositions on human uniqueness and purpose in any manner similar to previous dissenters.

William Bateson, credited with coining the term "genetics," is a major figure in the history of biology, particularly in the first decades of the 20th century. Bateson does seem to have a more specific political inclination than is obvious in the geneticists just discussed. In his lecture delivered in 1912 entitled "Biological Fact and the Structure of Society," he addresses the impact of Herbert Spencer's philosophy that applies a version of (non-Darwinian) evolution for sociological purposes and explanations. Bateson articulates the complexities of the ethical dimensions of the development of genetics research. He likens society to an organism and makes an aggressive argument for a form of socialism, quite contrary to the political commitments of Spencer himself (Bannister 1979, 64), though he advocates extreme caution given the newness of the science and the

abundance of unaddressed problems in Spencer's philosophy (1912, 12). Bateson writes: "From these considerations [of the new science of genetics] we may draw a conclusion that some elements of the doctrines vaguely described as socialism are consistent with, and indeed are essential to, stability. Society would do well to restrain competition between its parts so far as to ensure proper food and leisure for the lower grades of producers" (25). He cautions, however, "Of abstract rights, biology knows little: of equal rights, nothing" (29) and challenges his audience to participate in re-thinking social the political structures that delineates power and resources inequitably to the detriment of the whole.

On this point, Bateson undoubtedly spawned debate, but his political inclinations are not readily visible in his scientific work. In *Materials for the Study of Variation* (1894), for example, one is confronted with a tedious catalogue of comparative anatomy and a compendium of Latin terminology that would rival the most rigorous of dictionaries. If Bateson's work was ideologically motivated, it is well draped. Minimally, it is not explicit in the manner previously discussed. The works of these geneticists in the history of biology in the early 20th century indicate that concerns with evolution among biologists were connected to the science that was being done in biology and was being separated, at least on the surface, from religious and ideological commitments.

In the first years of the 20th century, opposition to evolution by natural selection was not centered on an evolution/religion basis as it was earlier in the Darwinian-era critiques. This is not to say that matter had been resolved or that the contest had ended. The epigraph, "'Darwinism is dead.'- Any sermon" appears in the opening of J. B. S

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Haldane's *The Causes of Evolution* (originally published in 1932),[20] and McOuat and Winsor (1995) suggest that this epigraph pertains rather specifically to a contest of words between Hilaire Belloc, a Catholic writer unpersuaded by evolution by natural selection and its associated materialistic perspective, and novelist H. G. Wells who felt quite differently (228). While no doubt present, in biology at least, it appears that the issue of natural selection is at least abstracted from religious or creationist discourse in comparison to earlier reviewers.

The development of early antievolutionism of the 20th century is centered elsewhere. The elsewhere seems to be in the ideas of Herbert Spencer and Thomas Huxley in regards to natural selection that undoubtedly spawned a surge in public resistance and rejection of evolutionary theory, particularly in the Protestant segments of the US and the Western world at large. This is the focus of the next section.

3.2.4 Section Summary

In this section I have outlined a number of critiques of Darwin's theory of evolution from the time his work was published up to shortly after the turn of the 20th century. These Darwinian-era critiques are important because they comprise a set of antievolutionist tools that will re-appear in later antievolution discourse. Though valid in the Darwinian era, the history of biology has by and large rendered them irrelevant. These critiques, however, form a key element of the antievolutionist methodology: a repository of ideas about how to attack evolutionary theory.

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[20]This information was taken from the copyright information in the republication of this work in 1990 by Princeton University Press and available online:
http://www.philoscience.unibe.ch/documents/TexteFS10/Haldane1932a.pdf.

I parsed these critiques into three categories: methodological, theological, and biological. In the area of methodology, critics argued that Darwin's theory was guesswork and not a proven fact. In terms of theological, critics argued the following: humans are obviously exceptional within the natural order; evolution relies too heavily on a materialist understanding of the world and cannot account for natural complexity, function and purpose; and without a supernatural account the doors are opened to rampant immorality. In terms of biological issues, critics argued that there is a lack of evidence—no intermediary forms; that natural selection could not work because intermediary forms would not be fit thus not available to natural selection, and that variation can only occur within set parameters—change and adaptation was possible but speciation was not. These are some of the more common objections to Darwin's theory in the antievolution toolbox.

Darwinian-era critiques tended to involve a doctrine of certainty, which is a commitment to the pursuit of provable knowledge and concrete facts. Darwin's theory seemed to challenge this doctrine and this challenge was integral to much of the critique. The doctrine of certainty will also reappear throughout antievolution discourse and will contribute to understanding ID discourse in later chapters.

One important point to take forward from this section is that much of the early criticism came from the mainstream scientific community, which is not the case in later antievolutionist discourse. Darwinian-era critiques are reprised in antievolution discourse, but though the earlier renditions had scientific validity at the time, they were addressed within the scientific community and are no longer valid in the contemporary scientific context. Furthermore, critique from the scientific community of the Darwinian-

era was responsive (reluctantly, perhaps) to the evidence and discourse of science. Antievolutionists that draw on these outdated critiques are not, a trend that becomes apparent in contemporary antievolutionist methodology. Contemporary antievolutionism involves a "scientific" critique of evolution, but is very much detached from the scientific enterprise—a trend that starts in early antievolutionism and is the focus of the next section.

3.3 Early Antievolutionism

Darwinian-era critiques were often motivated by religious thought, and by the early part of the 20th century, particularly within Protestant Christianity, science was perceived as threatening biblical authority and thwarting religious commitments. Within biology, evolution was slowly gaining acceptance, but within the social domain, it was being contested. Religion and science were intertwined in the earliest responses to Darwin, but as Darwin's theory was taken up in the social domain, a clear distinction emerged between the two.

In the divergence of religion and science discourse in relation to evolution, another key element of antievolution methodology becomes evident: in the general public, a social theory of evolution has trumped the biological theory of evolution, such as posited by Darwin. I am not suggesting that this substitution was a conspiracy of any sort, and indeed Darwin himself seems to lead the way in his *Descent of Man* ([1871] 2004). Nevertheless, the social theory of evolution came to take prominence in the minds of many, particularly Christian Fundamentalists, and this structured and continues to structure antievolution methodology. The assertion of social Darwinism was associated

with the undermining of the inerrant Bible and tangential undermining of biblical authority. To see this development, the conceptualization of evolution as progress, the burgeoning antievolutionist movement and the emergence of creationism are sketched. Though touted as a scientific issue, what antievolutionists began to do and continue to do is to substitute a social (read: religious) issue for a scientific one.

Religious objections were very much aimed at a version of evolution that was molded to address progressive social ideals, and it is the work of Herbert Spencer and Thomas Huxley that provided a great deal of the fuel for the public debate. Of particular concern within the social sphere was the waning of Protestant Christianity as an authoritative voice in the US social structure, a change which was in many ways attributed to social evolutionist thought at the interface of science and politics. Antievolutionism in this arena cohered into a move to promote Christian creationism which was later termed "scientific creationism" in a bid to re-anchor religious authority to scientific authority. The objective of this section is to trace ID lineage to creationism and creation science. This continuity allows me to show that like their forerunners, religion not science is a key motivating factor.

3.3.1 Evolution as Social Progress

Evolution was often perceived as a movement from simplicity to complexity which grounded an understanding of evolution as progressive (Bowler 2009a, 276), and this perception provided a basis for translating evolution into a social context.[21] It is at

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[21] The notion of progress was not the only basis upon which evolutionary theory was translatable to social theory. Robert Young (1985), for example, explicates the impact of Malthusian evolutionism. Young writes that "his principle of population—the Malthusian law that population, when unchecked, increases geometrically while at most the food supply can increase arithmetically—can be seen as a natural law about

this time that social evolution became understood as evolution in general. Evolution was used to glamourize meritocracy, challenge traditional loci of authority, and endorse social improvement. In this context, power and position in numerous quarters were at stake, and the hope of progress heralded by champions of social evolution held a great disappointment for many. Little wonder there was such a stir and the seeds of antievolutionism began to germinate. In this subsection, I first show how evolution was equated with progress and how it became an emblem of disdain thus contributing to the development of antievolutionism at this time.

Leading up to the turn of the 20th century and into its first few years, the rift between those in the general public who accepted and those who rejected the idea of natural selection was largely connected to the application of natural selection ideology to political agendas. Thomas Huxley, a key supporter of Darwinian evolution, was a self-made professional scientist who was keen to usurp religious authority with scientific authority (Bowler 2009a, 184). Huxley exercised this agenda by bringing the scientific community together. Peter Bowler (2009a) writes that Huxley's major accomplishment was that "he engineered a gradual takeover of the scientific community by those sympathetic to Darwin" (185). This feat was accomplished via the usual suspects of

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man" (24). This challenged the notions of harmony with nature and charged nature with being somewhat of a brute. The goodness of God and humanity seemed to be an impossible reality of his maxim in that having more mouths to feed reduces the amount of food available and demands some necessary 'evils' (2). The implications of this theory were vast: in the competition for limited resources, "vice, misery, war, famine, and death were inevitable consequences of nature's laws" (2). Constraining reproduction, therefore, seemed to be a viable course of action. Though one might argue that the constraining of reproduction might be a bid to alleviate the brutality of natural law, the question of who should exercise reproductive constraint introduced a different type of brutality in that this imperative was imposed on the lower social strata where reproduction (and pre-mature death) was most abundant. Darwin attributed a great deal to Malthus' population theory in the formulation of his own (52). It seems to be a short step to consider that as part of the natural world and subject to the same evolutionary pressures, existence can be understood as being as much of a social struggle as a biological one.

politics and rhetoric; on one hand, Huxley sold evolution to the general public by imbuing it with a narrative of progress by which the underdogs could hitch their hopeful wagon to the dream of moving from typical exclusion to the front of the pack; and on the other, he securely anchored science to the domain of the elite specialists (Bowler 2009a, 217). At the heart of the progress narrative as extrapolated from evolutionary theory is the notion of protracted meritocracy: try as hard as you can and slowly and surely things will improve.

Huxley's Darwinian social program was carried forward in the work of Herbert Spencer, though Spencer was not a Darwinian and the two did not see eye-to-eye (Bannister 1979). To Spencer goes the credit of bringing evolution to the people through his "Synthetic Philosophy" of universal progressive evolution (Bowler 2009a, 220). According to Spencer, evolution was a complete cosmology (Bowler 2009a, 221), though Darwin's theory was not. Mark Ridley (2004) writes that "for Spencer, evolution was a general law, applying outside biology as well as within, and providing a justification for ethical action" (384). The scope and direction of Spencer's philosophy oscillated over his lifespan and this dynamic is seldom represented in familiar historical Spencer narratives (Bannister 1979). Instead, Spencer's political voracity for individualism in conjunction with selections of his philosophy that incorporated familiar themes of technical, social, and moral progress were taken up, particularly in the US, by a largely non-academic audience and utilized as justification for the grounding of a philosophy of meritocracy in a free-market society: i.e., capitalism (Bannister 1979; Bowler 2009a; Webb 1994). His philosophy did not ignore the benefits derived from cooperation, but by extolling the

virtues of effort and independence, much to his dismay, Spencer was seen by some as promoting a ruthless and aggressive morality (Bannister 1979; Bowler 2009a).

Spencer's work, though embodying a mistaken interpretation of natural selection and often misinterpreted, according to Bowler (2009a, 308), provided the basis for a progressive, self-motivated, social/economic movement that made its way to the US in the later years of the 19th century. George Webb (1994) provides a helpful summary:

> Spencer's ideas struck a responsive chord in Gilded Age America. For the most part, Spencer's philosophical writings were not too difficult for the lay public to digest, at least at the superficial level. These writings presented a comprehensive social philosophy that appeared to be based on the science that Americans embraced enthusiastically following the Civil War. Equally important, laissez-faire proved attractive to a nation in which business success was increasingly evident and applauded. (37)

At the turn of the century, however, the notion of progress in the US context was realized by aggressive social and economic reform that offered the hope of peace and prosperity. The application of evolution to the social world seemed to justify imperialist ambitions, and the new world was supplied with cutthroat economic practices, a brutal war, and oppressive labor policies (Russett 1976; Webb 1994). In the public mind, natural selection became connected to these reforms that although promised social improvement actually led to numerous social ill. For many, evolution was transformed into an emblem of social degradation.

With all this change taking place in the social world, the dynamics of social authority were being pushed in several directions. Progress, thus understood, could be

converted from the hand of God to the efforts of individual citizens. Individualism, as a political orientation, had sprung forth as a formidable mindset throughout the US, and the church was slowly losing its authoritative grip (Russett 1976; Larson 2008). Religious-based opposition to evolution was a reaction to this loss, though some religious groups endorsed this perspective, reading an affinity with the Protestant work ethic (Bowler 2009b, 162).

There is a distinction to be made between liberal and evangelical Protestantism. Liberal Protestants tended to steer away from literal readings of the Bible and opted for theologies that more or less accommodated contemporary thought and discovery that had been taking place in the years leading up to and just past the turn of the twentieth century (McCalla 2013, 184). Evangelical Protestantism, however, sought to maintain a largely literal interpretation of the Bible and saw the liberal factions as wavering on matters of morality and conviction and as betrayers of true Christianity (McCalla 2013, 191). As liberalism spread, the slippage of biblical authority was equated to an increase of immorality, and the development of evolutionary science is an oft-cited instigator.

Spencer's vision of universal progress suggested important social implications relevant to the development of antievolutionism. Social Darwinism, as it came to be called, posited that on one hand, cultural advancement enhanced mental capacities, and on the other hand, advancement of mental capacities enhanced culture (Bowler 2009a, 287). Difficulties arose, however, when this philosophy was actually applied. In turn, social ideology fixated in numerous ways on social pruning and the eradication of the weak within the human species, seeing cultivated social evolution as a method of enabling progress by improving the cognitive and moral capacities of humanity (Russett

1976). Conclusions as to correlations between race and mental abilities, for example, resulted in, as Bowler (2009a) explains it, "a racial hierarchy created by the combination of biological and cultural evolutionism" (287).

Earlier versions of evolution had not really disrupted philosophical commitments to the Great Chain of Being, and assimilations of evolutionary theory into a broader social context, at first, largely rejected the concept of natural selection, maintaining that evolutionary theory, like its predecessors, was best understood as a linear ladder of development in the familiar progressive narrative tradition (Ridley 2004, 1). Furthermore, in the concept of evolutionary progress, the move from simple to complex or to progressively better, was touted as being confirmed by advances in prehistoric archaeology and anthropology that showed that humans (white male Europeans, to be precise) were ultimately the successful hominid species (Bowler 2009a, 274). Evolution, many would claim, had all along been marching toward the ultimate success of humanity by slowly but surely selecting for its cognitive genius (Bowler 2009a, 275).

The result of such a perspective engendered a slew of social injustices gathered collectively under the label of "eugenics." Although eugenics, the science of social cultivation, is perhaps most famously associated with Nazi social policy, it was by no means a primarily foreign concept to the rest of the Western world and was not necessarily intended to impart injustice. In Britain, the Eugenics Education Society of Britain was established in the early years of the twentieth century for the express purpose of seeking means of improving society, and many of such means included legislative and social reforms (Mazumdar 1992). The ambition of the eugenics movement was bold: to utilize the laws of biology to manipulate human populations and dramatically alter the

composition of society. However eugenics is judged in the present, eugenics might well be characterized as a moral ambition, of a sort. Those seeking social cultivation were interested in "the amelioration of the conditions of life of the very poor, in the cleaning up of their environment, their bodies and their morals" (Mazumdar 1992, 13). Though widely endorsed and promoted, in the spreading of this science, the politics of reproduction—who gets to reproduce and who does not—eventually inspired resistance.

The notion of human cultivation drew an ambitious following in North America where it was used to motivate suspect public policy. In Canada, for example, the Alberta Eugenics Board was formed in 1929, and its key function was to put eugenics into practice via the Sexual Sterilization Act of Alberta. Until 1972, almost three thousand people, who were deemed "mentally defective" by the governing body, were sterilized, typically either without their consent or with various degrees of coercion. Apart from the injustice of forced sterilization in its own right, the whole process of determining who was "mentally defective" amounted to a conflation of sexism, classism, and racism, with the majority of victims being women, poor, and/or aboriginal (Grekul, Krahn, and Odynak 2004).

Several antievolutionists cited eugenic practices as grounds for rejecting evolution. In Bryan's (1925) undelivered summation in the Scopes Trial, in his "fourth indictment against the evolutionary hypothesis," he argued that evolution holds no promise for individual improvement as "its only program for man is scientific breeding, a system under which a few supposedly superior intellects, self-appointed, would direct the mating and the movements of the mass of mankind... It recognizes no cry of repentance and scoffs at the doctrine that one can be born again." Stephen Jay Gould (2010) has

interpreted Bryan as charging evolutionists with the misuse of science "to present moral

opinions about the social order as though they represented facts of nature" (428). In a

sermon by Billy Sunday published in *Pittsburgh Post-Gazette* on February 12, 1914, he

states the following:

> People are dissatisfied with Philosophy and Science
> and New Thought as panaceas for their heart-
> aches!...Let your scientific consolation enter a room
> where the mother has host her child. Try your
> doctrine of the survival of the fittest. Tell her that her
> child [died] because it was not worth as much as the
> other one!...and when you have gotten through with
> your scientific, philosophical, psychological,
> eugenic, social service, evolution, protoplasm and
> fortuitous concurrence of atoms, if she is not crazed
> by it, I will go to her and after one-half hour of
> prayer and the reading of the Scripture promises, the
> tears will be wiped away and the house from cellar
> to garret will be filled with calmness like a
> California sunset![22]

Linking eugenics with evolution, as Sunday does in this sermon, allowed for an

exploitation of the indifference to the humanity of evolutionary process and the potential

inhumane perspectives it seemed to engender. Progress that entailed such a price was not

a progress that these antievolutionists could endorse.

There are several key points to take forward from this subsection. In the early

years of the 20th century, social evolution was understood as evolution in general in that

concerns with evolution focused mainly on its social and cultural applications. Moreover,

evolution was largely understood as progressive, and it was harnessed to movements

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[22] This article was retrieved from Google's newspaper archives:
http://news.google.com/newspapers?nid=1144&dat=19140212&id=7bYaAAAAIBAJ&sjid=LkkEAAAAI
BAJ&pg=2934,2846089. Last accessed July 1, 2014.

intended to improve social conditions. In one way, it glamourized meritocracy that

offered hope to those generally belonging to non-dominant social groups. In practice,

however, these movements enabled discriminatory and morally questionable practices.

Aggressive and ruthless economics and the eugenics movements were manifestations of

these practices. That evolution could engender immorality was equated to its contrariness

to biblical teachings and biblical authority which was understood as the primary arbitrator

of social organization. Evolution as progress thus spurred much protest, and it was a

significant element of the development of early antievolutionism. Resistance to evolution

was more an issue of sociology rather than biology and antievolution sentiments were

becoming more distant from what was happening in biology specifically and more

focused on what is happening in society at large.

3.3.2 The Emergence of the Early Antievolutionist Movement

The translation of evolutionary biology—or versions thereof—to politics

energized the antievolution movement in the US in the first decades of the 20th century.

Early antievolutionism, as I refer to the movement at this time, stems from religious

reaction to the ramifications that were believed to have been the result of the uptake of

Darwinian Theory in the broader cultural context. Evolution threatened biblical authority

and church authority, and religious reaction to these threats was substantial. In the US, a

commitment to an inerrant Bible was a doctrinal imperative for a majority of Protestant

evangelicals who had wielded a great deal of power in culture and politics. Staving off

Darwinian threats thus amounted to a defense of church and state. The politicization of

antievolutionism in America in comparison with Britain helps bring this development to light.

One factor in the early antievolution movement was its perceived threat to the authority of the Bible. Evolution by natural selection was not the first scientific challenge to religious foundations in the Christian West. Religious thought had been facing a barrage of issues that were challenging its historical veracity. Higher criticism of the Bible, discoveries and theories in geology, anthropology, and paleontology all posed formidable questions for natural theology in general, but typically some form of accommodation was made (McCalla 2013).[23]

By the time Darwin's theory appeared, the Christian world was becoming well practiced at assimilating scientific ideas into biblical interpretation and many managed to sift through evolutionary theory and salvage a basis of faith. One manner in which this was accomplished was in the notion of theistic evolution—the idea that God set evolution and its laws in motion along a preordained path (or some variation on this theme which may or may not include occasional divine intervention throughout the evolutionary process). This idea represented a compromise in that it held firm to a teleological narrative that preserved the sanctity of humankind while allowing evolutionary processes for everything else (McCalla 2013).

The erosion of biblical authority in an American context is a different story. In America, the religious ideals of many were the progeny of a Protestant settlement in the New World which was founded on the assuredness of sacred history and promise of

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[23] Higher criticism of the Bible refers to its subjection to literary and historical analysis on par with other historical texts. Such analysis placed the Bible into the context of a very human document replete with the human hallmarks of error and inconsistencies, and human authorship in connection to specific times and places. Higher criticism cast doubt on its status as a divinely authored text.

redemption (Boyer 1992, 226; Noll 2002, 11). By and large, Americans saw themselves as a Christian nation—the will of God had brought them to the New World and it was an imperative to instill a national and personal commitment to furthering God's will as revealed in common-sense reading of scripture (Apple 2001, 150). The belief was that the will of God was the redemptive path to a better life here on Earth and an eternal heavenly abode upon departure (Noll 2002, 12). The erosion of biblical and church authority threatened not just the personal beliefs of a few outliers, but it undermined the very political/social framework from which majorities of congregants drew their identity.

British conservatives, generally speaking, were more rehearsed at handling alternative views than their American counterparts, having a long history of wrestling with religious differences and striking more or less pragmatic solutions. Theistic evolution, which allowed for the existence of God and the process of evolution, was thus particularly prevalent in British thought (Numbers 2006; Bowler 2001).

Theistic evolution relinquished a literal reading of the Genesis narrative of origins. Although a small faction of more conservative biblical adherents did emerge in Britain, they did not amass the same following as Christian evangelicals in the US, who became particularly vocal against Darwinian evolution (Bowler 2001, Numbers 2006). From a political perspective, there was a major difference in status of both groups. British evangelicals were accustomed to their long-standing position as a minority group, whereas American evangelicals had stood as the majority (Numbers 2006, 161).

The distinction between the rise of antievolution sentiments in Britain where Darwin's theory was introduced and reactions to evolution in the US is helpful to understanding the political dimension of this issue. In Britain, antievolution was

associated with the implied shift of authority that challenged the clerical control of the church over issues of citizen and state. Furthermore, recall from the previous discussion, Huxley sold evolution to the general public in a progress narrative whereby the underdog had a viable chance to advance their social situation by sheer grit and grind. For the general public in Britain, evolution held the promises of relief from clerical rule and the possibility of upward mobility. Rather than clerical control, the US religious society already embodied a heritage of an anti-establishment "philosophy of common sense" and Reformed theology that granted authority to individuals to discern truth and goodness for themselves via their own innate sensibilities (McCalla 2013). McCalla writes that "common-sense philosophy justified anti-colonial resistance by placing the innate moral truths of justice and the right of individuals to be governed by the dictates of their consciences rather than external authorities above the traditional authority of King and Parliament" (2013, 178). The notion of common-sense philosophy has a long, winding and branching history of acceptance, rejection, and acceptance again, but in the context of the US political history, its overwhelming endorsement coincides with a time when "the cry everywhere was for independence, practicality, self-sufficiency, and universal political empowerment" (Noll 2002, 211). This movement translated into both an isolation from British thought and politics (including an isolation from theistic evolution which was associated with the Britain perspective) and an association in the early 20th century of Darwinism with higher criticism and anything else deemed to undermine popular authority (McCalla 2013). In the US at this time, an undermining of popular authority might well be understood as an undermining of church authority.

Antievolutionism in the US in the early part of the 20th century involved a bit of an inverted perspective of the original Huxley scenario. Christianity in the US was represented by a widening division between moderate and fundamentalist Christians (Webb 1994, 72). The former, a burgeoning majority in some regions, accepted higher criticism, at least to a limited degree, endorsed an allegorical interpretation of the Bible, and maintained a faith that by most accounts appeared rather adaptable to the bumpy world of scientific discovery, but the latter not so much (McCalla 2013, 183-6; Webb 1994, 72). In the US, individualistic philosophies were challenging the role and necessity of providence, and education and unbelief were capturing the young minds of the next generation of congregants. Social degradation was attributed to "the law of the jungle" being substituted "for the teaching of Christ" (Numbers 2006, 56). Within the US, the constituency of liberal Christians who were adapting to advances in science and education was growing and threatening traditional doctrines prevalent among Protestant Christianity, particularly the US evangelicals. In Britain, Huxley and his compatriots were bent on exploiting the dynamic idea of evolution to disrupt the social order and open the doors to the excluded majorities, but in the US, evolution was being attacked in an attempt to shore up the ideals and power of the diminishing religious majorities. Their movement was part of an attempt to preserve a Christian social order and political authority that seemed to be slipping into the modern abyss (Larson 1997; 2008).

McCalla (2013) explains that what had begun earlier as "reactionary biblicism crystallized into Fundamentalism early in the twentieth century," and a political battle of epistemologies began with a new ferocity (191). The first organized antievolution movement in the US began with conservative Christian factions at the turn of the 20th

century (Numbers 2006; Larson 2008). Antievolutionism as a staple of Christian Fundamentalism was formalized in a number of ways. For example, a series of pamphlets entitled *The Fundamentals* was published between 1910 and 1915 in which the key doctrines of true Christian faith were articulated.[24] These documents were circulated widely in a call-to-arms fashion. In the first volume of this publication, one writer, James Orr makes accommodation for a very limited form of theistic evolution, but states unequivocally that "evolution is not to be identified offhand with Darwinism" (vol. 4, 96), and that the foundation of everything in the rest of the Bible rests on the stories of "Genesis and the facts which they embody" (vol. 4, 97), but a few volumes later, Henry Beach (vol. 8) explicitly rejects evolution. In close quarters were a number of anti-evolutionist preachers such as William Riley, John Straton, and Frank Norris who incited public endorsement of strong antievolution sentiments (Numbers 2006, 61).

Darwinian theory undermined biblical authority and garnered strong reactions. In Britain, the undermining of biblical authority was accommodated by the rise of the acceptance of theistic evolution, and evolution promised to wrestle fate from the hands of God and the clerics and situate it in a meritocracy. In the US, however, evolution undermined the literal reading of the Bible, its inerrant status, and the cultural and political clout of Protestant Christianity. The emergence of the antievolutionist movement was, to a large extent, an attempt to safeguard the Christian church and state.

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[24] The Internet Archives website provides a downloadable digitized version of volumes 1-12 of *The Fundamentals*. This is the source to which I refer. It can be found here: https://archive.org/details/MN40295ucmf_2. Last accessed June 28, 2014. The date of publication for each volume is not clearly identified in this source, so I will identify specific references by volume number and page number. See bibliography for complete citation.

3.3.3 Developing Antievolutionism: Creationism

The emergence of early antievolutionism required some formal tools for resistance. As we have seen, antievolutionism emerged from a resistance to social Darwinism that, being sold as a narrative of progress, engendered individualistic philosophies and social-organizing practices that evangelical Christians in particular found to be immoral and socially destructive. Furthermore, evolution undermined biblical authority which in turn undermined the cultural and political power of Protestant Christianity in the US. In the development of early antievolutionism the antievolution methodology was solidified. I will show this by outlining the development of creationism and later creation science as a formalized attempt to counter evolution.

There is a bit a groundwork that needs to be done first, however. "Creationism," as it is used here, refers to the assertion of the Genesis narrative of origins as a literal historical event. Creationists in the early part of the 20th century sought scientific evidence to support the Genesis story. "Creation science" appears in the mid-twentieth century and asserts the Genesis story as a scientific text. Creation science employs more formal scientific language and arguments. This work will not focus on a detailed comparison between the two. Generally, uses of the term "creationism" can be understood as referring to the events and ideas in the first half of the 20th century pertaining to assertions of the empirical evidence of the Genesis creation story and "creation science" as referring to later development of these assertions.

The development of creationism marks a transition in the resistance to evolution. It is in this context that the various elements of the antievolution methodology that I have been suggesting come together. Darwinian-era critiques reappear, social evolution stands

for biological evolution, and objections to evolution are disassociated from biology. What is added to this mix is the symbolic use of science and the collecting of any and all academic credentials of any type to bolster credibility.

This methodology is situated in the doctrine of certainty. To see how this methodology comes together I will first revisit the doctrine of certainty in its connection to the Christian worldview, the impact of this connection to the uptake of a selective scientific vocabulary by Christian Fundamentalists, and the formation of a solid antievolution methodological template. Early antievolutionism was transformed into creationism and creation science in an attempt to thwart the rise of Darwinian thought.

The doctrine of certainty once again played an important role in the development of antievolutionism. In discussions of the Darwinian-era critiques, critics argued that Darwin's theory was speculative because rather than offering conclusive proof, it offered probability or the consilience of inductions as strong supporting evidence. The scientific community, however, wanted conclusive evidence and many rejected Darwin's thesis. The utility of evolutionary theory eventually quieted dissent, but the probability of evolutionary development, for many, was a feeble rival to the certainty of the divine Creator.

According to William Jennings Bryan (1925), the face of US antievolutionism at the Scopes Trial, the theory of evolution substitutes chance for the concrete word of God; therefore, evolution should be rejected. In his indictment against evolution and in direct reference to Darwin's work, Bryan, writes:

> If the results of evolution were unimportant, one
> might require less proof in support of the

hypothesis; but, before accepting a new philosophy
of life built upon a materialistic foundation, we have
reason to demand something more than guesses:
"we may well suppose" is not a sufficient substitute
for "thus saith the Lord." (np)

The word of God, understood as an absolute and certain Truth, was the bedrock of a society that had enacted statutes, institutions and various social-organizing strategies on its basis. Darwinian evolution seemed to be a fray in the seam, thus, in a re-stitch attempt, those opposed to the social implications painted it as ostensibly wrong: "The sun rises with sufficient regularity to become a striking phenomenon, and we have discovered a tendency towards sunrises. Speculation is invoked, but speculation died with the great god Pan when Jesus was born. Scientific observations are dumb, except to say that all God's creatures are fearfully and wonderfully made" (Beach, *The Fundamentals*, vol 8, 36).

Indeed, at the top of the list of essential doctrines, according to *The Fundamentals*, was an uncompromising commitment to the inerrancy of the Bible (McCalla 2013, 192-7). Biblical inerrancy is the perspective that the Bible is the divinely-inspired Word of God. As such, it contains no mistakes, does not contradict the natural sciences, and if approached with common sense and an open-minded Baconian-like inductive methodology, then one will find current and relevant Truth in a straightforward reading of the text (McCalla, 2013, 186). In this perspective, "the words of the Bible, therefore, are not hostages to history but transparently express the true and changeless will of God" (McCalla 2013, 186). What constituted biblical inerrancy, however, was up for debate, as the inerrant Bible was entirely dependent on an "inerrant" interpretation. This is to say that although various factions of adherents to biblical

inerrancy agreed on the fundamental points, there was disagreement and debate about which interpretations were most accurate.[25] This debate played a key role in the development of a formal creationism from the more generic antievolutionism.

Even though the rejection of evolution as a socially degrading system was a major priority at the turn of the century, in regards to the scientific realm, many of those committed to biblical inerrancy had adopted an interpretation of the Genesis creation story that accommodated some degree of scientific discovery. In circulation, for example, were a number of ancient earth friendly interpretations of Genesis such as the "Day-Age" theory that posited each day of creation story as an indeterminate amount of time thus allowing for a limited form of theistic evolution, and the "Ruin and Restoration" theory that allowed for an uncertain lengthy duration of time and a catastrophic event (or multiple events) prior to the restorative six-day creation (Numbers 2006, 10). As McCalla points out, such interpretive practices allowed for reconciliation of sorts between scientific insight and biblical inerrancy. However, Darwinian evolution transgressed the inerrancy principle when understood to be denying the special creation of species and espousing natural force in lieu of a personal God and Savior (McCalla 2013, 196).

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[25] Nancy Ammerman (1994) explains that in order for Fundamentalists to maintain their commitment to an inerrant Bible, they must employ careful interpretation practices, and these practices are highly dependent on one's community in which interpretation is vetted. Those in positions of authority within such communities, such as teachers and pastors, play a substantial role in the exegesis (61). She writes that "the more people are immersed in the Fundamentalist community of discourse, the more easily they accept the Bible as completely accurate" (61). Discrepancies often arise when biblical passages conflict with contemporary scientific knowledge, such as in Leviticus 11:6: "The rabbit, though it chews the cud..." Several hermeneutical techniques can be employed to reconcile the two: the given passage can be designated as poetry or metaphor, the passage can be removed from its literal and/or historical context, the superficial meaning of the texts is ignored; or passages that appear to anticipate contemporary scientific insights are highlighted, and there are likely more techniques one could add (Ammerman 1994, 61; McCalla 2013, 192-5). If the community and its ideological commitments and articulations thereof are strong, however, adherents "are more likely to question the validity of science than to doubt the unfailing work of God" (Ammerman 1994, 61).

Although many religious factions had accepted a form of theistic evolution, for many evangelical Christians the compromise of theological evolution was irreconcilable with biblical doctrine, and natural selection was attacked as conceptual tool of the devil. Furthermore, the Scopes trial had brought to the fore questions and perspectives on the definition, limits, and boundaries of "science." For many, Darwinism equated to atheism and demanded a complete refusal. Science that could not garner the same degree of certainty as the biblical record was bad science at best or not science at all. [26]

Many of the Darwinian-era critiques re-appear in antievolutionist discourse in the early part of the 20th century. For example, the key reason given for the rejection of evolution by antievolutionists was that it was just guesswork drawn from a shoddy methodology. In one chapter of *The Fundamentals* entitled "The Decadence of Darwinism," (vol. 8) the author, Henry Beach, argues that Darwin's work was "marvelously unscientific" and that Darwin was "imaginative and careless in his observations" (47). Antievolutionist crusader William B. Riley challenged the theoretical veracity of evolution and writes that "the first and most important reason for its elimination is the unquestioned fact that evolution is not a science; it is a hypothesis only, a speculation" (inside quote, Numbers 2006, 65). George Frederick Wright (*The Fundamentals*, vol. 7, 5-20), offered what appears to be the most 'technical' review of the thesis. Apparently drawing on the assertions of physicist Lord Kelvin that the earth was

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[26] McCalla (2006) notes two elements significant to the rejection of all modes of Darwinian evolution including theistic ones: an increase of coherency within the Fundamentalist movement asserted the primacy of biblical inerrancy in reaction to the impact of higher criticism and a decline of credentialed Christian scientists asserting theistic evolution (158). In this context, within the Fundamentalist camp a strong commitment to biblical creationism became one of its defining characteristics. While evolution by natural selection was gaining support within the scientific realms, it was being dismissed in religious realms, and a significant disparity between modern science and Fundamentalist Christians emerged (McCalla 2006, 158). Fundamentalists on one hand shunned modern science, but on the other, clamored to make their claims more "scientific."

much younger than had been established by Lyell, a key factor in the development of Darwin's theory (Bowler 2009b), Wright argues that the geological age of the earth is insufficient to account for the time required for the gradual processes of development posited by the theory of natural selection and concluded that Darwinian evolution was unsalvageably void of proof (*The Fundamentals*, vol. 7, 5-20). It was theory not fact.

Though Wright recycles Darwinian-era critiques, the way in which scientific discourse is used indicates that science is symbolic, unlike in their articulation by the originators of these critiques. Wright notes various discussions taking place in the realms of biology such as genetics and heritability but engages only those "technical" elements that can be cleanly discredited by a biblical perspective. The age of the earth as suggested by evolutionary theory is clearly contradicted by the biblical record, thus for Wright, it was clearly wrong. As though such "proof" of the impossibility of evolution was insufficient, Wright tacks on a rehearsal of an argument previously offered by St George Mivart. Mivart, some fifty years earlier (in Hull 1973), had argued that incipient stages of organisms would not offer a positive fitness value thus would not be selected for in the evolutionary process. As such, he could not see how natural selection as a gradual accumulation of developmental changes could be a true premise. Though not citing directly, Wright adds that special creation as described in the Genesis account offers the best explanation. The point to be made here is that Wright identifies himself as being privy to the scientific community, but this is only a type of pageantry because although he cites the biological discourse of the time he does not engage it.

In other words, Wright uses science symbolically, as a rhetorical device. Anti-Darwinian theories of evolution abounded at this time, such as Morgan's mutationism,

but Wright does not even note these let alone evaluate them in any objective manner. There were many critics who had factually well-grounded reasons to reject Darwinian evolution and in fact, as we learned, most evolutionary scientists at the time were not Darwinian. But this matters little because Wright's focus was on asserting the biblical narrative and his audience was not the scientific community but the religious contingent of a traditional Christianity. This discussion of evolution had little to do with biology and lots to do with shoring up the faithful. Utilizing science symbolically detaches it from its context and may indeed deflect the audience's attention from actual scientific discourse.

In Wright's assessment a precedent is set in the antievolution movement that contributed to an antievolution methodological template in which science is employed as symbolic authority, detached almost entirely from the context of discovery and its findings, and utilized as tool of persuasion or reassurance for those already sympathetic to a Christian worldview. For those committed to the Genesis account of creation, design by God was a legitimate scientific claim that could be supported by empirical evidence and inductive reasoning, and it could be grounded in biblical certainty.

Luckily, Fundamentalists had a prolific contributor to the development of creationism who blazed the trail of the antievolution methodology. George McCready Price, a Seventh Day Adventist from Atlantic Canada at the turn of the 20th century, took on the project of science and biblical inerrancy and added structure to the emerging antievolutionist protocol. Price's scientific background amounted to a few introductory courses in the natural sciences (Numbers 2006, 91). In *The Fundamentals of Geology* (1913) Price constructs an elaborate argument, replete with images, charts, and fold-out maps, for flood geology—a theory that utilized the biblical account of Noah's flood as an

investigative framework and as a causal explanation for the earth's geological contours. He extends flood geology to creation in the following way (1913):

> these contemporary documents, taken from the
> rocky pages of nature's diary, which thus become
> such conclusive vouchers for the Biblical story of
> the Deluge, compel us to go back of all this and face
> the problem of Creation itself; for if this world
> catastrophe has intervened, and if we cannot be sure
> that one type of life is older than another, inexorable
> logic will compel us to acknowledge the great fact
> of a literal Creation of doubtless all the various
> distinct types of life (Man included) at
> approximately one time. (255)

Price's work made virtually no impression on the scientific community, but his work did become extremely popular within Fundamentalist circles, and it became a key element in the development of alternative scientific and educational institutions whose objective was evangelism: spreading the good news of creation—and salvation, by extension (Numbers 2006, 121). For believers of this sort, meaning and purpose all pointed to the perfection to be achieved in a future heavenly realm.

"Scientific creationism," as this model of argument came to be known in the 1960s, was the tool whereby Fundamentalists publicly attacked evolution and preached a return to the inerrant Bible as a principal article of faith. Practitioners in this field drew inspiration from the work of Louis Agassiz, a well-respected and highly credentialed Harvard scientist who had responded during the Darwinian-era critiques (Numbers 2006, 19). Though not a creationist or biblical literalist in the same way as creationists in line with the Fundamentalist ideals, his work provided some important elements for the antievolutionist template. Agassiz rejected evolution almost in its entirety because it

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undermined his own scientific commitment to idealist morphology (Numbers 2006, 19).

He argued that although change and variation did occur, they did not occur to the extent

of propagating new species (in Hull 1973, 440). It was Agassiz's approach, however, that

was significant for future creationists: It boasted a highly credentialed scientist with

objections that adhered to the notion of special creation and were formulated in a detailed

formal technical manner.

Though it took some time for McCready's work to gain wide acceptance within

Fundamentalist circles, it became a staple for scientific creationists as it provided a

science/Bible coupling that relinquished the need for Darwinian explanations of any kind.

This is not to say that they were a unified force. There were various interpretations of

Genesis that accommodated contemporary science to some degree and variations that

sometimes contradicted each other (Numbers 2006, 120). What they did have in

common, however, was the commitment to the idea that purpose and direction was

obvious and everywhere present. The "science" of creationism, modeled on McCready's

approach, provided an important focus, resolving theoretical and interpretational

differences (123). This time, science, if it could still be called such, was accommodated

to the Bible rather than the Bible accommodated to science as had generally been the case

previously.

3.3.4 Section Summary

There are some important points to take from this discussion. Religious response

to evolution was in many ways not really a response to Darwinian evolution per se. It was

a response to Social Darwinism. This is not to say that the biological core of Darwinism

was something entirely different, the two are tightly intertwined, but in the context of the Fundamentalism, Social Darwinism was primary. Understandably then, there was less immersion in scientific discourse than in earlier responses. Furthermore, religious objectors were citing some very legitimate social and moral concerns that might trouble many—religious or not. The distinction between the scientific theory of evolution and the social theory of evolution as brought out in the discussion thus far is important because it flags a significant bifurcation between science and religion that influences the emergence and trajectory of the antievolution movement.

Religious reaction involved resistance to evolutionary theory as it was applied to the social domain and as such it threatened traditional loci of power and authority. Though there are likely many more factors, this resistance to evolution stems from a perceived threat to the authenticity, thus the authority, of the Bible. Such a threat undermined the basis of faith for many, and in the US in particular, this threat not only undermined personal beliefs, it also undermined national identity. The proliferation of Darwinism in social and political realms seemed to open a legitimate alternative to strict Protestant social and political structure. In reaction to these threats, antievolutionism was written into official (more or less) Fundamentalist doctrine.

The history of Darwinian evolution as translated into a political philosophy was seen to endorse an individualist morality, to undermine biblical and Church authority, and spurred antievolution endeavors. Furthermore, the development of a science that contested biblical authority raised the ire of many in a country whose history and identity were supported by a sacred narrative in which a vast number of citizens understood their place in the global landscape as being of divine providence and governed by sacred

principles and ideals. That a contrary science such as evolution could flourish in public

institutions such as public schools, despite its contestation by the majority of people,

raised the profile of the prolific power of science and seemed to brandish the threat of the

diminishing power of democratic process.

The development of creationism and creation science brings all the elements of

the antievolution methodology together. Darwinian-era critiques reappear, social

evolution stands for biological evolution, and objections to evolution are detached from

biology. In addition, the work of early creationists provided a template of sorts by

utilizing scientific language and credentials to bolster credibility. This methodology is

connected to the doctrine of certainty in that the probability of evolution, to many, was

nothing compared to the certainty of the Bible. Here the methodology is set, in the next

section, we will see how it is refined.

3.4 From Creation Science to Intelligent Design

Several significant legal contests have erupted that have shaped and shifted the

eventual transition of creationism into ID. The antievolution methodology was forged and

refined, to a significant degree, via a call and response type of relationship between the

creationists and the state. This exchange pushed creationists to make creationism more

"scientific."

The Establishment Clause in the First Amendment to the US Constitution has been the battle ground of the creationists and objectors.[27] In each of the trials since the mid-20th century, the teaching of creationism has been deemed as having religious elements and has thus been prohibited in public classrooms. After each defeat, creationists successively moved to re-conceptualize creationism in more scientific terms leading to the appearance of ID, which is purported to be a theory that is free of all religious connotations. To show this it is necessary to briefly discuss several things: key legal contests leading up to the appearance of ID; the role of the Discovery Institute—ID headquarters, so to speak; and the Dover Trial—a legal contest in 2005 that specifically addressed the scientific status of ID. This is, once again, part of the US history, though its ripples have traveled far and wide.

3.4.1 Creationism and the Law

The antievolution movement has oscillated and shape-shifted over the course of the past century, but the main thrust of its approach remains intact. The antievolutionists have been engaged in a series of legal contests centered on the teaching of evolution and creationism that increasingly restricted teaching creationism in public schools as evolution became accepted within mainstream science; the response to these contests was a major factor in how the movement developed and how its methodology was refined. Though there remains a large contingent of adherents to traditional forms of creationism,

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[27] The Establishment Clause of the First Amendment reads: "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the government for a redress of grievances." The aim of this amendment is to ensure religious freedom by prohibiting state-sanctioned privileging of one religion over another (Cornell University Law School: http://www.law.cornell.edu/constitution/first_amendment. Last accessed May 21, 2014).

ID is largely the contemporary face of this movement. The following is a very brief overview of the major cases and their influence on this movement.

In the early years of the twentieth century, a movement led by William Jennings Bryan sought to enact a series of antievolution laws as protest against a dwindling of faith, among other social ills, that he saw as a direct consequence of the proliferation of Darwinism (Larson 1997, 3). The introduction of The Butler Act in the state of Tennessee banned the teaching of evolution in public schools and became the target of the American Civil Liberties Union in a bid to challenge both the specifics of the law and contemporary mainstream ideas of science and religion more broadly (Larson 1997, 3).

The Scopes Trial in 1925 is undoubtedly the most famous antievolutionist event, and although education was technically the topic at issue, this trial clearly held substantial political implications. Tennessee was the first state to enact a law strong enough to tempt legal challenge and attract the attention lawyers from the American Civil Liberties Union (ACLU) and renowned labor lawyer Clarence Darrow. This trial essentially constituted a public debate on not only evolution but the veracity of biblical inerrancy and the right of the people to administer their own academic curriculum (Larson 1997). The Scopes Trial highlighted the crux of the matter: how to protect the political-religious domain from science that threatens (or is perceived to threaten) traditional beliefs and undermines a traditional understanding of the world the basis of social authority. From this perspective, rejection of evolution is an understandable position and the development of antievolutionism a logical response. Creationism officially won out in this trial, but according to media coverage that followed the decision, there was no clear cut winner (Larson 1997).

Antievolutionists at this time were not yet well prepared to effectively tackle evolution, and despite the technical win, creationism received a great deal of very negative publicity. Prior to the Scopes Trial, even though antievolutionist thought was prevalent, there was a decided shortfall of (technical) creationists—adherents to special creation with the academic credibility to offer sustained critique (Numbers 2006, 59). The evangelical world was splintered among various versions of creationism, some of which were more accommodating to evolution than others, and this dilution weakened antievolutionist initiatives. In an early unite-the-right kind of movement, a network of alternative "scientific" institutions, societies and journals was developed (Numbers 2006, 121). Creationism, the authentication of the Genesis record by empirical evidence, became a primary research program in a move to bring cohesion to the creation story and restore certainty as a basis of truth and authority (Numbers 2006, 120). Creationists translated biblical narrative into scientific empiricist-like formulations that launched a multifunctional punch at Darwinian evolution, at least in the eyes of the faithful. They sought to build on the efforts of Price and draw correlations between biblical history and the natural world. This move rebranded evolutionary possibility as a dangerous uncertainty, and it repositioned scientific authority to authenticate a literal biblical interpretation. In the process a robust antievolutionist approach was laid out.

Over the next several decades, a series of laws similar to Tennessee's Butler Act were enacted and challenged in many American states, culminating in the *Epperson v. Arkansas* trial in 1968. Prior to this case, Arkansas law prohibited the teaching of evolution in public schools. This trial successfully brought down one of the last antievolution laws and firmly established creationism as a religious doctrine, thus, in

violation of the Establishment Clause of the First Amendment when cited as a foundation for public school policy or as part of the public school curriculum (Larson 1997).

The *Epperson v. Arkansas* case sparked a concentrated effort to construct creationism as a legitimate area of scientific research. Creation Science or Scientific Creationism, as it became known, was the centerpiece of this movement. The element of technical presentation was added to the elements established earlier, moved to the top of the agenda, and association with the Bible was lowered from view (Numbers 2006, 271). Established earlier, the Creation Research Society for example, under the guidance of Henry Morris, well known co-author along with John Whitcomb of *The Genesis Flood* (1961)—a text that presented the case for diluvial geology, and a young earth in defense of biblical inerrancy—began producing and distributing educational material presented in scientific language and utilizing a scientific model (Larson 2003, 92; Numbers 2006, 226-8). The idea was that by raising the scientific profile and lowering the biblical one, creationism could be reintroduced to the science classroom without transgressing the Establishment Clause.

Yet, in the tradition of the earlier Fundamentalists, science was primarily used symbolically. Creation science material had three ambitions: to assert the scientific validity of creationism, to elide its biblical basis, and to undermine evolutionary theory (Numbers 2006, 271). Scientific engagement or discovery was not part of the agenda because creationists were not concerned with the transmutation of species as they were with the transmutation of (Christian) citizens.

Creation science publications were widely popular within Fundamentalist circles and were leveraged to launch legal initiatives. With the support of this substantial

following and pursuant to the erasure of antievolution legislation, creationist advocates utilized the scientific packaging of creationism as grounds for introducing equal time legislation in both Arkansas and Louisiana in 1981. This legislation required the teaching of both evolution and creationism as part of the standard science curriculum (Larson 2003, 135). Both bills were successfully challenged and creation science was once again declared to be religious and unscientific, thus inappropriate for the science classroom (Larson 2003).

In 1987, the *Edwards v. Aguillard* case marked a major development in the history of antievolutionism and the development of ID. In this case, the teaching of creation science, even with its new scientific veneer, was yet again outlawed in public schools because its tenets were deemed religious thus in conflict with the Establishment Clause (Larson 2003, 6). Following this decision, creationists sought ways to repackage creationism in a way that would ramp up the scientific element even further and make it legally viable in a science classroom. One way that advocates sought to do this was to make it more generic by utilizing the phrase "intelligent design" in lieu of "creation" (Lebo 2008, 139). It is at this time that the idea of intelligent design began to surface in a notable way, though at first it was not openly associated with creation science (Lebo 2008, 143). This trial is significant because it marked the explicit beginning of the ID movement, which sought to not merely downplay association of the Bible with creationism but to sever the connection almost entirely—at least in appearance. The idea was that if it was articulated only in scientific terms, then it could not be excluded based on its religious context or inspiration.

The impact of this decision cannot be understated. Berkman and Plutzer (2010)

explain it thus:

> The cumulative impact of the Epperson and Aguillard
> cases was to eliminate from consideration a wide range
> of public policies that might be favored by the
> majority of citizens in most states. State governments
> – their legislatures, state boards of education, textbook
> commissions, and local school boards – could not
> endorse the biblical story of creation, could not
> endorse "creation science," and could not ban
> evolution entirely. (20)

If this issue merely concerned textbook content, it may not have generated such pointed

and sustained interest, but at the heart of this particular aspect of the controversy is a

rehash of Bryan's earlier concerns at the time of the Scopes Trial.

Bryan's efforts were largely concentrated on keeping social power in the hands of

the "common man:" "Teachers in public schools must teach what the taxpayers desire

taught," Bryan argued (1925, np). From the beginning this debate has been riddled by a

contest over social control: in a democracy, collective action is (ideally, perhaps) to be

harnessed to the will of the majority. Though a simple and noble ideal, it raises a host of

potential problems. Perhaps the majority is "wrong." It may be that the majority wishes to

constrain the liberties of minority groups, or lacks the expertise necessary to make

judgments on issues that are most important to them. One might question the parameters

and extent of the power of the majority. On one hand, it may be sufficient for the

majority to elect the "right" person for the job, on the other, perhaps the majority should

oversee all the activities of the "right" person once they take their position. Discussion of

the philosophy and scope of democracy exceeds the objectives of this project, but the

point to be made here is that concern with social power and influence, rather than scientific knowledge, structures this discourse early on and is carried into the development of ID (Berkman and Plutzer 2010).

The tussle between creationism and the law has had a dramatic impact on the development of antievolution methodology. Through these series of cases, creationists tested both the legal and scientific limits of creationism and adapted accordingly. For example, since the versions of creationism asserted thus far have been rejected, creationists have progressively moved to divorce creationism from its biblical roots and instead assert what appears to be a secular scientific theory—ID.

3.4.2 The Discovery Institute

The translation of "creation science" into "intelligent design" amounts to rebranding of creationism. Although the name changed, those committed to this perspective remained committed to the earlier objectives of influence and persuasion, and the key elements of the antievolution methodology were carried forward into the new framework. The appearance of the Discovery Institute in the early 1990s heralded not just new terminology but a new and improved creationist formulation.

ID advocates utilized and improved on the antievolutionist approach. As will be examined more fully in the following chapter, ID has adopted many of the Darwinian-era critiques and has connected them to the notion of evolution as a hallmark of uncertainty thus an unreliable and dangerous source of knowledge. The Discovery Institute brought together an association of highly credentialed personnel. It was (and still is) spearheaded by a number of PhD holders listed on their site as "Fellows" from a number of disciplines

with an assortment of publications that proffer a sophisticated attack on Darwinian evolution. Although I will discuss the element of Bible/science coupling in the following chapter, it is important to note here that one of the greatest strengths of ID is that this coupling is camouflaged by the technical presentation. This, of course, was the explicit and intentional design of is progenitors.

Even with this reinvention of creationism, the key objectives remain stable. The Discovery Institute describes itself as such:

> An inter-disciplinary community of scholars and policy advocates dedicated to the reinvigoration of traditional Western principles and institutions and the worldview from which they issued. Discovery Institute has a special concern for the role that science and technology play in our culture and how they can advance free markets, illuminate public policy and support the theistic foundations of the West.[28]

This description offers a broad idea of its goals, but it is not specific as to the types of policies or cultural ideals that are of importance. One can infer that "traditional Western principles" and "the worldview from which they issued" refers to a Judeo-Christian heritage upon which the bulk of social and legal ideals and institutions are based, given that these are the "theistic foundations of the West."

In the early years of the Discovery Institute, a sub-center was established to focus explicitly on ID. The founders of the Center for the Renewal of Science and Culture, as it was called, drafted a specific vision for the center. Known as the "Wedge Document,"

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[28] The full document can be found here: http://www.discovery.org/about.php. Last accessed June 26, 2014.

this manifesto of sorts spelled out the group's ideals and long-range objectives.[29] In this document, proponents claim that evolutionary thinking has poisoned the cultural landscape and redress requires a plethora of ID research, publications, dissemination, and legal/policy initiatives.

The central claim of the "Wedge Document" is that evolutionary theory has severely infected Western society. The argument is that evolution undermines human uniqueness and the notion of human spirituality, asserts a materialistic perspective, and portrays humans as "animals or machines who inhabit a universe ruled by purely impersonal forces and whose behavior and very thought were dictated by the unbending forces of biology, chemistry, and environment" ("The Wedge," intro page). In this account, without the concept of divine creation there is no recourse to the realm of objective moral standards that has been creationism's historical companion. As a result, the argument goes, moral relativism takes root and a mishmash of unjustifiable and problematic social institutions and social-organizing practices emerge. Furthermore, in a materialistic reality the concept of personal responsibility becomes challenging due to the implication that "human thoughts and behaviors are dictated by our biology and environment" (intro page). There is little to dispute in the argument that ID grew from creation science.

While creation science advocates were pecking away at public education, ID advocates were poised to launch an all-out culture war. And they did just that. Writings and publications by ID fellows have been virtually completely rejected by peer-reviewed

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[29] The source document to which I refer can be found here: http://ncse.com/files/pub/creationism/The_Wedge_Strategy.pdf. Last accessed June 28, 2014. This source does not identify the specific author. I will reference it with the page number as: "The Wedge."

journals, have not generated new research, and are void of credit in the scientific

community. Yet the Discovery Institute continues to flourish, their books and media

productions are popular sellers, and the fellows enjoy a steady demand for their public

speaking services (Phy-Olsen 2010, 63). Furthermore, though not in total alignment with

the remaining creation science proponents, ID enjoys a generous segment of the

multimillion dollar creationist marketplace (Phy-Olsen 2010). All of this success is in

spite of its non-science status.

3.4.3 The Dover Trial

In 2002, a confrontation between evolution and ID began to brew that would

make the connection between creationism and ID explicit and, from a legal point,

establish that ID is not science. Several prominent members of the Dover Pennsylvania

School Board began to verbalize objections during official school board meetings to a

state-sanctioned biology text, and their objections included a seeding of their desire to see

ID taught alongside evolution (Lebo 2008). Their complaints were focused on the extent

to which the Darwinian theory of evolution permeated the text with absolutely no

reference to alternative theories (Lebo 2008). With the support of the Discovery Institute,

the school board introduced a new policy to be implemented in January 2005.

The new policy required grade nine science teachers to read a brief statement in

class. The statement contained three explicit objectives: to alert students to gaps and

issues with Darwinian evolution; to undermine its status as a scientific theory; and to

introduce students to the theory of ID (Lebo 2008; Scott 2009). Objecting board members

resigned and several teachers refused to read the statement. In December 2004, the

ACLU, representing eleven parents from the Dover district, filed a lawsuit claiming that the policy was in violation of the Establishment Clause because it was religiously motivated and reflected a particular religious perspective. The Dover School Board was represented by The Thomas More Law Center, a strongly conservative Christian organization located in Ann Arbor, Michigan.

The case was decided in favor of the parents. In the opening arguments by ACLU lawyer Eric Rothschild claimed that the Dover school board "changed the science curriculum to advance a specific religious viewpoint, and in doing so, they ignored accepted scientific knowledge, failed to avail themselves of the advice of established scientific organizations, and ignored their own science teachers who opposed the change to the science curriculum" (*Kitzmiller v. Dover* Sept. 26, 2005, 5:8-14).[30] And in the final decision, the presiding judge agreed.

Of Pandas and People (Davis, Keynon, and Thaxton 1993), a key creation science text, was a major piece of evidence in this case. This text is a creation science text that was widely used as an educational resource by evangelical Christians. Shortly after the *Edwards v. Aguillard* decision (1987), a second version of this text was hastily readied where the term "creator" was replaced with "intelligent designer" while the remainder of the text remained intact. In the Dover trial, Barbara Forrest, a witness for the plaintiffs and author of an extensive investigative report on the history and development of ID, presented a telling discovery of one incident in the original transcript

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[30] The transcripts of the Dover trial are available here: http://www.aclupa.org/our-work/legal/legaldocket/intelligentdesigncase/dovertrialtranscripts/. Last accessed June 28, 2014. I reference these in the following way: "*Kitzmiller v. Dover*," date, page number and lines of the transcript. See bibliography for full citation.

of the second edition where the term "creationists" was incorrectly replaced by "design proponents" resulting in "cdesign proponentsists" (Lebo 2008, 140). The Dover decision ruled that "intelligent design" connotes creationism and ID advocates had made a conscious effort to camouflage its creationist basis. Creation science starts to disappear where ID begins.

Scholars have commented on the apparent inverse relationship between the use of the terms "creationism" and "intelligent design" in relation to a fairly consistently shared set of concepts. Philip Kitcher (2007) writes that "Christian writings about Darwinism have shown that as a the fortunes of 'scientific creationism'—the favored alternative of the 1970s and the 1980s—have waned, references to "creation science" have given way to citations of "intelligent design" without other perturbations of the prose" (6). Apart from Forrest's explicit testimony in this regard, a rather new tool adds some empirical weight to this observation.

Over the past several years, Google has undertaken the project of digitizing texts and has amassed a searchable corpus of more than five million books or 4% of all books ever printed dating as far back as 1800 (Michel et al. 2011, np). This collection can be searched using a publically available tool called the Ngram Viewer. With this tool, researchers have developed a field of study referred to as "Culturomics" that seeks to quantify cultural trends (Michel et al. 2011). Research with this tool shows correlations between the usage of words/phrases and major cultural events such as one might expect. For example, this tool shows that usage of the word "slavery" peaked during the 1860s, the time of the Civil War. One group of researchers in this area writes that "cultural change guides the concepts we discuss...Linguistic change, which, of course, has cultural

roots, affects the words we use for those concepts" (Michel et al. 2011, np). These researchers provide numerous such examples.

Figure 2, shown below, shows the results of a search for the usage of the terms "atheism," "intelligent design," "creationism," and "creation science" since 1980. What is particularly interesting in this visual is that there is a rather striking correspondence to what scholars have suggested in regards to the invariance of the use of the terms "creationism" and "intelligent design." Moreover, the point at which "creationism" and "intelligent design" intersect is very close to the 2005 mark, the very year of the Dover Trial. This exercise is not meant as a robust study of any sort, but it does suggest that the textual changes that Forrest discovers are in line with a broader textual and cultural shift.
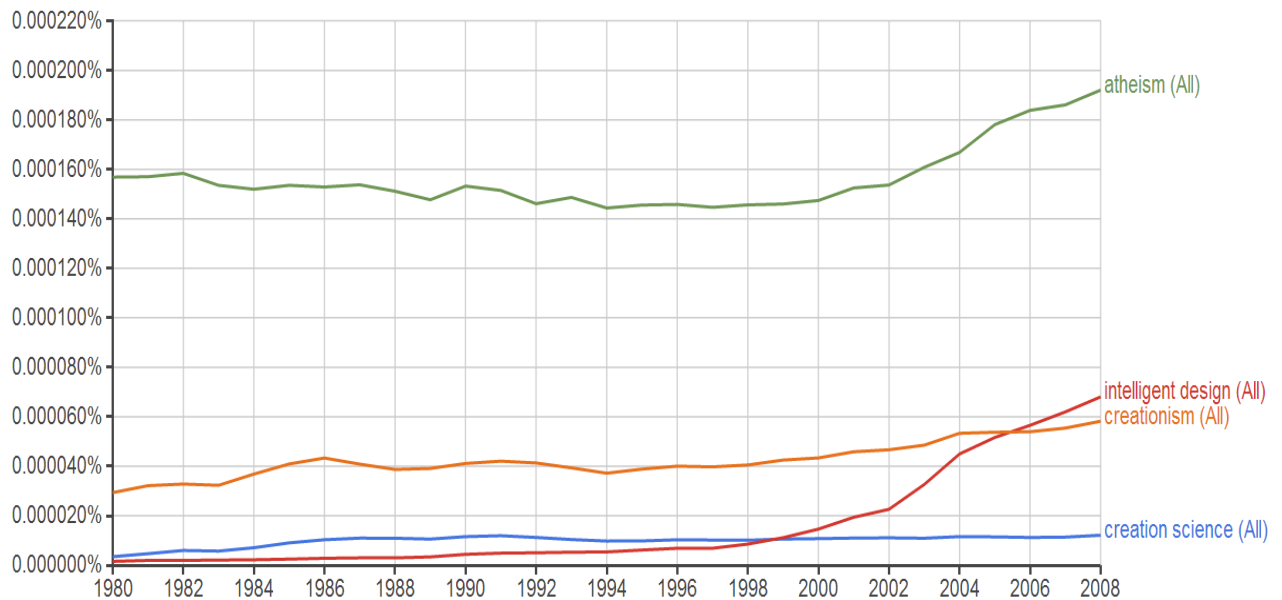
Figure 2: Ngram Chart for "creation science," "atheism," "creationism, and "intelligent design. This graph is an image from Google's ngram viewer which searches millions of digitized books and documents over the time period specified and reports the number of occurrences of the selected phrases.

There are several important points to be taken forward. ID has been forged from creationism in response to legal battles that have excluded it from the science classroom. The transition was an explicit attempt to detach creationism from its religious context, and its primary objective is to influence culture more generally. Furthermore, ID is disregarded by the scientific community as non-science and it was deemed as non-science by the court, most recently, in the Dover trial of 2005.

3.5 Conclusion

In this chapter I have endeavored to establish a key point of the guiding argument of this dissertation: ID is not about science in any conventional way. In so doing, I have attempted to show that ID is continuous with earlier creationism, not in content—that is the aim of the next chapter—but in its process of becoming. This process of becoming is at once a product and producer of an antievolutionist methodology that has developed and adapted to and with the dynamic cultural and political environment over the past century.

The antievolution methodology that constitutes the primary toolbox of creationists consists of a number of pliable elements that can no doubt account (at least to some extent) for the robustness of antievolutionary sentiments over the decades. Drawing on a long-standing value of certainty in Western thought, academically credentialed evolution dissenters recite outdated technical problems with evolution (this element of ID is a key focus in the following chapter), and science is used symbolically to validate biblical narratives and legitimate biblical authority while at the same time all traces of biblical connections are carefully and intentionally elided.

There is little doubt as to the lineage of ID. It has been and is strongly connected to Fundamentalist Christian groups. While it is true that ID advocates enjoy a great deal of benefits from their place within the Christian community, the potential potency of the work of ID candidates is visible within its political aspirations and achievements. Certainly education reform is a major priority, but as this dissertation will show, education is only a small element of a much bigger cultural project that ID advocates have in mind.

CHAPTER 4 INTELLIGENT DESIGN

4.1 Introduction

In the previous chapter, I made the argument that ID is not really about science. Rather, I argued, ID is the outcome of the development and adaptation of an antievolution methodology developed over time in response to the perceived threat of evolution to traditional Christian social strongholds. The argument that ID is not about science implies that the primary interest and objective of ID advocates is not knowledge and discovery, and this chapter will focus on this implication by showing some ways in which the primary interest of ID is influence and persuasion. This is not to say, however, that there is no relationship between science and ID whatsoever. One may ask then that if ID is not about science, what does science have to do with it?

It is to this question that I turn next. ID theory certainly appears to be scientific: it is articulated in sophisticated formats such as detailed digital models illustrating molecular machines and technical texts authored by a roster of highly credentialed fellows. I have been suggesting that ID advocates utilize science symbolically, and in this chapter, I expound on this claim to suggest that the use of science is a strategic means of establishing an oppositional framework that is essential to the ID platform. The next chapter explains how and why this oppositional framework is essential, but in this chapter, the aim is to show how science functions to create this dichotomy. I structure this exploration by considering how science within the ID discourse comprises a repository of conceptual, authoritative and defensive tools. Though not about science per se, ID advocates construct science as a somewhat fictional entity that they place at the

center of their antievolution methodology. With this move, the antievolution

methodology developed earlier comes into full bloom in ID.

The strategic interdisciplinarity of this chapter begins with a look at foundational

ID texts and concepts. Identifying key texts and concepts is accomplished by utilizing

pointers from the Discovery Institute, the hub of ID discourse, by consulting scholarly

literature about ID, and by reviewing testimony of key ID proponents in the Dover Trial

(see 4.4). In the process of identifying key ID texts and concepts, it becomes apparent

that the issues of concern among ID proponents and dissenters involves a discussion of

the nature and function(s) of science, which prompts a slight shift of focus.

The object of interest in this chapter is the science of ID. This object of interest

constitutes another instance of level-jumping and an even narrower focus than the

previous chapter. An exploration of the historical context of ID in the previous chapter

enabled me to suggest that ID is not really about science, and so the narrower focus in

this chapter allows me to offer a better view of the appearance of science in ID discourse

and suggest what it might mean. This object of interest, the appearance science of ID,

seems to involve a number of significant interacting elements such as philosophical ideas

about what science is, how it should be done, and its political dimensions. This object of

interest pulls in different directions and compels a number of academic lenses.

In selecting appropriate academic lenses, I take cues from such sources as the

literature about ID, the writings and works of ID proponents, and my academic network

of colleagues and advisors. These cues suggest the uptake of the lenses of science,

science studies, and philosophy, among others. This chapter is what has emerged from

the wandering at this level of examination. It is the result of a dynamic and adaptive

journey through a dense terrain, but the view of the political dimensions of ID that it garners is very helpful for accessing the relationship between ID and sexual politics.

4.2 Science as a Conceptual Toolbox

ID comprises a dual approach to addressing the origins of the natural world. One element of ID theory proposes arguments for the empirical evidence of intentional design and the other proposes a series of challenges aimed at unseating the validity of evolutionary theory. Both of these elements enlist concepts from various domains of science. In this way, science is used symbolically because the ideas are recycled, outdated, and untenable in mainstream science and are not connected to the happenings within the realm of biology itself. Using science in this way leads to impasse not dialogue with mainstream science and as a result, the ID movement is largely detached from broader scientific domains.

A roadmap of this section will be helpful. To make these points explicit, this section will weave together three elements: an overview of the tenets of ID, an overview of its critiques of evolution, and a brief discussion how science in this context functions as a conceptual toolbox. The objective is to show that science in ID discourse is the foundation of the first element of their antievolution methodology: it is the source from which ID proponents take various concepts and ideas about how to attack evolution with which they develop their arguments. In this way ID is continuous with Darwinian-era critiques, but much of these critiques are outdated and out of touch with most current science practices and ideas. What seems apparent, then, is that ID and mainstream

science are operating in different epistemic domains. The science that ID transacts in is fairly distinct from science as it is commonly understood.

4.2.1 An Overview of ID Tenets

It is difficult to pin down a definitive description of ID as there does not seem to be a standard definition utilized consistently throughout the ID literature. The Discovery Institute website, however, provides what appears to be the most encompassing description:

> Intelligent design refers to a scientific research program as well as a community of scientists, philosophers and other scholars who seek evidence of design in nature. The theory of intelligent design holds that certain features of the universe and of living things are best explained by an intelligent cause, not an undirected process such as natural selection. Through the study and analysis of a system's components, a design theorist is able to determine whether various natural structures are the product of chance, natural law, intelligent design, or some combination thereof. Such research is conducted by observing the types of information produced when intelligent agents act. Scientists then seek to find objects which have those same types of informational properties which we commonly know come from intelligence. Intelligent design has applied these scientific methods to detect design in irreducibly complex biological structures, the complex and specified information content in DNA, the life-sustaining physical architecture of the universe, and the geologically rapid origin of biological diversity in the fossil record during the Cambrian explosion approximately 530 million years ago.[31]

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[31] This definition can be found on the Discovery Institute website: http://www.intelligentdesign.org/whatisid.php. Last accessed June 28, 2014.

This explanation highlights the two most common tenets of ID. These are: 1. the natural world—organisms and particularly human beings—is too complex to be a product of chance; 2. evidence of design is abundant in the undeniable presence of purpose and function in living organisms thus logic dictates the existence of a designer. The Discovery Institute, along with numerous ID proponents, produce material for the purpose of explaining ID to a general audience, and in these materials, such as the video *Unlocking the Mystery of Life* (Allen and Eaton 2003), these two premises are used to support the overarching assertion that the world is purposeful and directed for the specific development of humanity as an entity distinct and unique from the rest of universe. Underlying these tenets is the rejection of methodological naturalism that grounds mainstream science by constraining scientific boundaries to the natural world and precluding recourse to supernatural or mystical explanation. Taken together, these elements constitute what Sarkar (2007, 4) calls the Central Argument of ID: empirical evidence is inconsistent with the theory of evolution; and/or evolution provides an incomplete explanation of the origins of biota; and intelligent design is much more comprehensive, thus a better theory. These ideas are intertwined and overlapping.

One key tenet of ID is referred to as "irreducible complexity." ID advocate Michael Behe is well-known for his articulation of this argument which he grounds upon his work as a biochemist. In his book *Darwin's Black Box: The Biochemical Challenge to Evolution* (2001), Behe defines "irreducible complexity" as:

> a single system composed of several well-matched,
> interacting parts that contribute to the basic function,

wherein the removal of any one of the parts causes the system to effectively cease functioning. An irreducibly complex system cannot be produced directly (that is, by continuously improving the initial function, which continues to work by the same mechanism) by slight, successive modifications of a precursor system, because any precursor to an irreducibly complex system that is missing a part is by definition nonfunctional. (39)

Behe's examples of such systems include the bacterial flagellum and the cascade mechanism of blood-clotting. The essence of this argument is that if any part of the complex system is removed, the organic mechanism will fail to function properly, thus it would not be optimal, and the system would not be an object of interest to natural selection. Put another way, unless an organism has all parts intact and functioning properly it would not be fit and not selected in the evolutionary process.

The notion of irreducible complexity, or variations thereof, has been debated time and again since its earlier incarnation by Mivart in response to the publication of Darwin's *Origin* in 1859. Mivart (1871) argued that "no mere survival of the fittest accidental and minute variations can account for the incipient stages of useful structures" (1848KL). Structures in their incipient stage would not have all of their parts in place and functioning, and so they would not be optimal thus would not be favored by natural selection. In comparison to the concept of irreducible complexity, Mivart seems to allow for a greater role of natural selection in its capacity to weed out less than optimal organic features and entities, but he clung to the necessity of a creative force, though not necessarily in a Genesis version of special creation (Gould 2002, 1220-3).

Stephen Jay Gould (2002, 1223) provides a concise summary of Darwin's response to this argument. In the context of what has become known as "the 5 percent of a wing problem," Gould writes:

> Yes, five percent of a wing offers no conceivable aerodynamic benefit, and could not therefore either be formed, or converted into a full wing, under a smooth regime of natural selection for flight. But sequences forged by selection only presuppose continuity in differential reproductive success, not continuity in a single function. Thus, the incipient stages may have performed a different function, for which their 5 percent of a wing imparted benefits. Eventually, the enlarging proto wing entered the domain of aerodynamic benefit, and the original function changed to the primary utility now exploited by most birds. Current function cannot be equated with reasons for historical origin. (1223)

This response is supplemented by the explanation that an organism may have one trait that is used for multiple things and that multiple organs may work together for one cause (Gould 2002, 1223). Consequently, it is not always necessary for an organ to develop something new from scratch "but may evolve by intensifying a previously minor use, or even by recruiting an inherent but unexpressed potential" (Gould 2002, 1223). Functions can be changed and enhanced according to environmental demands. Meanwhile, the modified organ may cease to perform in its previous capacity as other organs continue or intensify their operations in the service of the same task. Such arguments comprise the more contemporary concept of exaptation—"characters, evolved for other usages (or for no function at all), and later 'co-opted' for their current role" (Gould and Vrba 1982, 55).

In his testimony at the Dover trial of 2005 and subsequent publication *Only A Theory: Evolution and the Battle for America's Soul* (2008), Kenneth Miller countered

the argument of irreducible complexity in a very similar manner. ID advocates regularly utilize the example of a mousetrap to demonstrate the concept of irreducible complexity (see Behe 1996, 42). Miller appeared at the trial, and in numerous public lectures since, sporting a mousetrap with missing components. He explains that with the missing components the object utterly fails in its intended purpose but can easily be adapted to another function for which it is ideally suited—a tie clip. In other words, one organism's trash is another organism's treasure, kind of, to put it in pedestrian terms.

Miller offers various organic examples as well, but ID advocates fail to be convinced. Behe's rejection of Miller's explanation is twofold. First, Behe argues that even if an organism utilizes 'parts' that functioned in a different way in an ancestral organism, the new system is still dysfunctional as a system until all the parts are assembled and the appropriate adjustments are made. Here is the example Behe (1997) provides:

> Suppose you wanted to make a mousetrap. In your garage you might have a piece of wood from an old Popsicle stick (for the platform), a spring from an old wind-up clock, a piece of metal (for the hammer) in the form of a crowbar, a darning needle for the holding bar, and a bottle cap that you fancy to use as a catch. But these pieces couldn't form a functioning mousetrap without extensive modification, and while the modification was going on, they would be unable to work as a mousetrap. (66)

According to this account, previous functions of the trap make it ill-suited for virtually any new role as part of a new complex system.

Behe does not accept exaptation explanations for several reasons. One reason is that, according to Behe, this type of development is so improbable that it is virtually impossible. In *Darwin's Black Box* (1996)*,* he writes that "as the complexity of an interacting system increases, though, the likelihood of such an indirect route drops precipitously" (40). He classifies exaptation as development via "indirect routes," and he argues that given the amount and degree of complexity in the natural world, evolutionary explanations are simply untenable. For Behe, exaptation would require extensive modifications not possible by the process of natural selection processes. He writes:

> One couldn't take specialized parts of other complex
> systems (such as the spring from a grandfather
> clock) and use them directly as specialized parts of a
> second irreducible system (like a mousetrap) unless
> the parts were first extensively modified. Analogous
> parts playing other roles in other systems cannot
> relieve the irreducible complexity of a new system;
> the focus simply shifts from 'making' the
> components to 'modifying' them. In either case,
> there no new function unless an intelligent agent
> guides the setup. (112-3)

Behe is suggesting that even if all the parts are there, whether they are made for a specific function or are adapted from something previous, something external to the system must set the system in motion. The system must somehow be "turned on," and the re-purposing of parts does not evidence make, according to Behe. In a written response to the Dover decision, Behe (2006) writes that "a bare assertion that one kind of complex system (say, a car's transmission) can turn into another kind of complex system (say, a car's airbag) by random mutation and natural selection is not evidence of anything, and does nothing to alleviate the difficulty of irreducible complexity for Darwinism" (5). Behe's rejection

is firm: Exaptation is impossible, but even if it were, it is not evidence of anything, and even if it were evidence of something, it would be evidence of the work of an intelligent agent.

Behe's position showcases nicely the new and improved old antievolutionist methodology. Notice that his argument is a recycling of an earlier *scientific* critique of evolution. Recall from the last chapter that Darwin answered this type of problem by directing attention to the level of populations rather than the level of individuals. St. George Mivart (1871) argued that organisms in their incipient stage would not be functional thus would not be subject to natural selection. At the population level, however, some organisms could be seen to function well enough in specific conditions so as to confer a level of fitness sufficient to produce a next generation. To this answer can be added the contributions of more contemporary scientists as mentioned: the function of traits can vary according to environmental demands and resources, and sometimes traits function well in situations for which they were not originally selected—a beneficial byproduct, so to speak. Philip Kitcher (2007) is more explicit in that he describes ID as "dead science," which he explains as "a doctrine that once had its day in scientific inquiry and discussion, but that has rightly been discarded" (8). Kitcher (2007) goes through ID arguments to point out the ways in which ID critiques of evolution are, in the current context, either answered and/or irrelevant. The point to be made here, however, is that ID advocates simply do not accept the resolutions or explanations, and thus they remain at an impasse with the mainstream scientific community.

Dembski (1998a) uses the term "specified complexity" or "complex specified information" to refer to the phenomena of patterns which he argues is the hallmark of

design. According to Dembski, a specified pattern is one that portrays enough regularity or information as to be reliably identified, and a "complex" pattern is one that has a probability factor so high as to be beyond the reasonable expectation of random occurrence. Dembski (1999a) provides this example:

> A single letter of the alphabet is specified without being complex (i.e., it conforms to an independently given pattern but is simple). A long sequence of random letters is complex without being specified (i.e., it requires a complicated instruction-set to characterize but conforms to no independently given pattern). A Shakespearean sonnet is both complex and specified. (np)[32]

In other words, living organisms (though Dembski is specifically interested in DNA), as with the Shakespearean sonnet, are both complex and specified. Such a phenomena, Dembski argues, bespeaks intelligent design.

William Dembski harnessed the theory of specified complexity to the mathematical theorem referred to as "no free lunch" (NFL), and in fact, such was the title of one of his major ID publications (*No Free Lunch: Why Specified Complexity Cannot Be Purchased without Intelligence* 2001). One of the grounding assertions of ID theory is that evolution cannot satisfactorily attest to the abundant biological diversity so readily visible, and Dembski uses the NFL theorem to anchor this assertion.

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[32] This article can be found here: http://www.leaderu.com/offices/dembski/docs/bd-specified.html. Last accessed July 1, 2014.

In this framework, evolution is conceptualized as an algorithmic process and described in mathematical terms (Sarkar 2007, 79).[33] Sahotra Sarkar (2007) provides a concise definition of "algorithm" and its capacity as a framework for studies of evolution. Sarkar writes that "an algorithm is a step-by-step procedure for solving a problem, sufficiently precise and detailed for it to be encoded in a computer program" (79). Sarkar goes on to explain that the study of the effectiveness and efficiency of algorithms to solve various problems is the domain of computer science. Thus far, algorithms designed to emulate evolution by natural selection have fared well in that they successfully produced digital environments that seem to model evolutionary development in the natural environment (79). Evolutionary problems are classified as optimization problems in that they seek to mimic the fitness goal of evolution (80). The NFL theorem, in a dramatically oversimplified explanation, states that given an optimization problem, one can search for the best solution or procedure (algorithm) to solve this problem, but the solution, if applied to all possible problems, is statistically equivalent to blind or random chance (Sarkar 2007, 82). Dembski adopts the analogy of evolution by natural selection as an algorithm that is responsible for all evolutionary optimization problems. The bottom line, for Dembski, is that based on the NFL theorem, natural selection is no better than random chance thus it could not work universally to produce the fittest (optimal) entities such as biologists (according to Dembski) claim. What mitigates the problem entailed in the NFL theorem is that the more details that are known of the defined problem, the more likely

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[33] Dembski is by no means the only person to consider evolutionary process in this framework. In *Darwin's Dangerous Idea* (1995), for example, Daniel Dennett argues that Darwin's work uncovered a class of algorithms that can be formulated into a general statement: "Life on Earth has been generated over billions of years in a single branching tree—the Tree of Life—by one algorithmic process or another" (51). Ford Doolittle and Eric Bapteste (2006) have argued that, based on observations of gene sequences particularly in micro-organisms, there are multiple ways in which evolutionary processes could be conceptualized, a web-like model is one such variety.

that an appropriate or workable algorithm will be selected. Thus, says Dembski, there is typically an optimal or best possible match between entities and their environments means that foresight (or intelligence, in other words) was/is necessary. Dembski argues that his work "demonstrates the inadequacy of the Darwinian mechanism to generate complexity" (2001, xiii).

"Complex specified information" or "specified complexity" can be explained in much more general terms: When something displays a pattern that admits purpose or function in ways that are ruled out by statistical probability, then it is reasonable to conclude that its production required forethought, knowledge, and careful design. According to ID, all living things display specified complexity, thus all living things are intelligently designed. Examples that are commonly used to demonstrate the contrast between something that has specified complexity and something that does not are the snowflake and the honeycomb. In this view, a snowflake is complex but not specified because it is a byproduct of chemical interactions and has no direct function or purposeful information. The honeycomb, on the other hand, is made to hold honey, it comes from life, is not a byproduct of blind chance, thus it is specified and complex (Miller undated, np).

This concept fails on a number of levels. Of course it is a naive view of the natural world to see only optimality or to see organisms as always progressing toward optimality.[34] Organisms contain some traits that might be considered optimal and others

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[34] ID advocates are by no means unique in portraying evolution as a process of optimality. Stephen Jay Gould and Richard Lewotin published an oft-cited article entitled "The Spandrels of San Marco and the Panglossian Paradigm: a Critique of the Adaptationist Programme" (1979). In this article the authors challenge a pervasive and overzealous faith in the power of natural selection to produce optimality. They write that the adaptationist programme asserts "the near omnipotence of natural selection in forging organic design and fashioning the best among possible worlds. This programme regards natural selection as so powerful and the constraints upon it so few that direct production of adaptation through its operation

that definitely would not, thus progression toward optimality for one trait may mean a movement away from optimality for another. Sarkar (2007) argues that to the average non-evolutionary biologist, evolutionary "progress" might be best described not as survival of the fittest but as the survival of the fit enough. The no free lunch theorem is therefore irrelevant to evolutionary biology (90). "What is relevant, for biological evolution, is how the algorithm performs in the particular optimization scenario that constitutes biological evolution on Earth" (85), not how the algorithm performs over all possible scenarios. Sarkar refers to the perspective of pervasive optimality as "fairytale biology" (92). Philip Kitcher (2007) goes a bit further by arguing that any designer free from the constraints of the natural laws of evolution to produce new organisms "would be expected to do much better" (49).

For Dembski, however, specified complexity is the epitome of optimality. In this view, organisms portray specified complexity in that they admit sophisticated patterns of organization such that the parts constitute an intricate alignment of function and structure as necessitated by the environment. Such structural sophistication (optimality) is a known element of design. Thus based on the NFL theorem, significant foreknowledge was necessary—it required rationality, or, in other words, the instantiation of knowledge and

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becomes the primary cause of nearly all organic form, function, and behavior" (585-5). They ground this critique on numerous examples in which optimality was not the apparent driver of development in all aspects of organisms. More recently, Ford Doolittle has made a similar point. In an article entitled "Is Junk DNA bunk? A critique of ENCODE" (2013), Doolittle also challenges what he sees as a pervasive tendency within biology to define the function of a trait (or phenotype-determining elements, to be more specific to his paper) by what something does without paying necessary attention to its developmental history. (A common analogy to demonstrate this problem would be to say that the function of the nose is to hold glasses, though this is not an example used by Doolittle.) Doolittle writes that "this approach enshrines 'panadaptationism,' which was forcefully and effectively debunked by Gould and Lewontin in 1979 but still informs much of molecular and evolutionary genetics, including genomics" (np). The tendency to assign a function to every trait seems to be based on the assumption that organisms are climbing the steady peak to optimality, and it seems to stem from the very naïve view of the natural world that I ascribe to Dembski and ID advocates.

reason. The problem with this assertion, however, is that one must know the source

and/or function in order to determine the origin. Or, put another way, one must know the

source in order to identify the source.

Dembski's works are renowned for containing elaborate mathematical formulas

and explanations, but though his articulation is modern and sophisticated, his argument is

not (Pigliucci 2000). The essence of Dembski's claim is that the degree of complexity

apparent in nature is just too extensive to have happened by chance. Adam Sedgwick

wrote in 1860 that creation is the only viable means by which new species could appear,

and by creation he meant:

> the operation of a power quite beyond the powers of
> a pigeon-fancier, a cross-breeder, or a hybridizer; a
> power I cannot imitate or comprehend; but in which
> I can believe, by a legitimate conclusion of sound
> reason drawn from the laws and harmonies of
> Nature,—proving in all around me, a design and
> purpose, and a mutual adaptation of parts, which I
> can comprehend,—and which prove that there is
> exterior to, and above, the mere phenomena of
> Nature a great prescient and designing cause. (285-
> 6)[35]

What Sedgwick suggests here is that the natural world bespeaks design that, in

accordance to the dictates of logic, an undirected force simply could not accomplish. He

does not employ the technical tools of Dembski, but the premise is very similar.

This very type of criticism gets no respite throughout the long history of

antievolutionism. The apparent fitness of organisms, their traits and environment, for

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[35] This quote can be found in *The Spectator* archives online: http://archive.spectator.co.uk/article/24th-march-1860/17/-objections-to-mr-darwins-tzeort-of-the-origin-_. Last accessed July 1, 2014.

many can only be metaphorically understood in mechanical terms—like a clock, and thus can only be understood as having come about by intentional design. This argument glosses over poor design and relatively frequent abnormalities that punctuate the living world. Dembski responds to these points by explaining that he is more concerned with showing the actuality of design and not the quality of design, though his theory posits much more.[36] Elsewhere, Dembski accuses critics of "parasitizing" his work and focusing on trivialities.[37] Dembski's theory focuses almost exclusively on the assertion that evolution is improbable given the pervasiveness of reliable informational patterns found in the living world. By distinguishing between the presence of design and the quality of design, Dembski deflects the issue rather than engaging it. Deflection rather than dialogue once again establishes an impasse and detachment from the broader scientific community. The science of Dembski and Behe is something rather different from science in its more common uptake.

4.2.2 ID and the Critique of Evolution

ID advocates not only assert the theory of design but they also critique evolution. Once again science is used symbolically as it is mined for conceptual tools in this vein. And again, despite refutation by mainstream science, these critiques persist.

For ID advocates, a major flaw of evolutionary theory is that it cannot explain the origin of life. ID advocates demand proof that life can arise from inorganic material as a

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[36] This interview can be viewed here: http://www.thebestschools.org/blog/2012/01/14/william-dembski-interview/. Last accessed January 20, 2014.

[37] See http://www.uncommondescent.com/evolution/jeffrey-shallit/ for full comments. Last accessed June 28, 2014.

substantiation of evolutionary theory, and they typically cite the failure of Stanley Miller and Harold Urey's attempts in 1953 to create life in the lab as proof that life cannot arise from inorganic material (see Wells 2001, for example). In this perspective life can only come from life.[38]

The implications of Darwinian evolution were evident to early critics as well. H.G. Bronn ([1860] 1973), for example, argued that Darwinian theory was an all or nothing deal: if it is true then it must explain the origins of life from purely material entities and if it is false then a creationist explanation is necessary. Bronn too calls for experimentation in order to rule one way or the other. He refers to the work of Joseph Priestly a century earlier and his discovery that the oxygenation of "green matter" at the edge of a pond brought it to 'life' (Hull 1973, 125). Though Priestly's findings were questionable, Bronn suggests: "If Priestly's or some such organic matter could be generated from inorganic matter and if a faultless proof could be provided to show that organic species canaries in the manner suggested by Darwin, then his theory would receive the strongest possible support in the shortest possible time. But as long as neither possibility is confirmed, we still need a creative force" ([1960], 1973, 123).[39] Bronn's perspective does allow for evolution, even macroevolution, so long as the notion of a first cause or creator is left intact.

The implication of Bronn's comments is that evolution is tenable so long as there is a distinction between explaining biological development from biological genesis.

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[38] I am not claiming that ID advocates are either unique in this regard or the first ones to argue this point. I am merely focusing on explicating their arguments at this time.

[39] "Canary," as an archaic verb, is defined as "to dance; to frolic; to perform the old dance called a canary" (Ogilvie and Annadale 1883, 381). Available on Internet Archives: https://archive.org/details/imperialdiction03annagoog. Last accessed July 1, 2014.

Indeed, for Darwin, the origin of life was a separate issue from the origins of species and he avoided the issue in his *Origin* (Pereto et al. 2009, 395). Scholars studying his collected works—both professional and personal writings—note that he did at times seem to endorse natural causation, but as some of his contemporaries and many writers since have pointed out, even though spontaneous generation quickly became part of a whole Darwinian package, the acceptance of Darwinian evolution need not stand or fall on its capacity to explain the ultimate origin of life (Pereto et al. 2009; Miller 2008). The result of this form of accommodation is generally understood as theistic evolution.

Theistic evolutionary theory has proven a viable option for those seeking a basis of faith in light of evolutionary insights (Miller 2008), but for ID proponents, however, no such accommodation is tenable. ID theorists discount versions of theistic evolution as conceding too much to Darwinian principles and giving up too much biblical authority. Indeed William Dembski (1996, np) equates theistic evolution to atheism because, in his assessment, its acceptance of chance means that: "No, the heavens do not declare the glory of God, and no, God's invisible attributes are not clearly seen from God's creation."[40] For ID proponents, design is obvious and commitments to design theory preempt nuanced consideration of evolutionary possibility.

ID proponents often complain that evolutionists fail to define evolution carefully and thus confusingly conflate "micro" and "macro" variants. "Microevolution" involves changes and adaption of species to their environment within limited degrees. Microevolution can be seen in the variability within a species, and ID (and indeed creation science) advocates accept this form of evolution with little reservation (Shanks

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[40] This quote is taken from paragraph 15 of this article which can be found here: http://www.discovery.org/a/122. Last accessed on May 29, 2014.

2007, 43). Macroevolution, on the other hand, refers to the development of complex living systems and the transmutation of species. It is this version of evolution that ID advocates reject (Shanks 2007, 43). Macroevolution requires novelty, which ID advocates claim cannot be produced via the processes of evolution—random mutation and natural selection. Evolutionists, generally speaking, do not posit a clear distinction between micro and macro evolution consider it a strength of evolutionary theory that one process can explain both.

At stake, for ID advocates, is the theory of common descent. ID advocates do not accept that natural selection could work on such a scale as to produce new species, but more importantly, they do not accept that natural selection could work to produce the advanced cognitive capacities of human beings, which they understand to be in a preeminent dominant position in relation to the rest of the natural world (Wells 2001, 7). Like evolutionary critics before, ID proponents suggest that human beings are fundamentally different from the rest of the natural world. This difference is visible in the great cognitive gaps between humans and even the most advanced non-human primates. In rebutting Darwin's common descent theory, St. George Mivart ([1871] 1973, 362) argued that the distinction between human intellect and other animals is not a matter of degree but rather of kind.[41]

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[41] Although a co-discoverer of natural selection, Alfred Russel Wallace (1891) also rejected the idea that natural selection could be responsible for the "moral and intellectual nature of man" (461). He writes that "because man's physical structure has been developed from an animal form by natural selection, it does not necessarily follow that his mental nature, even though developed *pari passu* with it, has been developed by the same causes only" (463). Furthermore, Wallace goes on to argue that some moral and intellectual elements could not have been produced by natural selection and therefore must have been caused by something else—"law, or agency" (463). Using math and music as examples, Wallace structures his argument as follows: natural selection favors those abilities that enhance survival; math and music have only been significantly developed rather recently in human history, and so that earlier generations survived without it shows that it must not have been crucial to survival and must have been produced in some other way. Wallace extends this argument to "the faculty of wit and humour," by arguing that like the other

The significance of this distinction, according to evolution objectors in both eras, is that without the cognitive supremacy of human beings there can be no account of moral action and more significantly, perhaps, no hope of transcendence. The intellectual domain of human beings often posited as the essential moral organ. "Strip him of these faculties, and he becomes entirely bestial; and he may well be...nothing better than the natural progeny of a beast, which has to live, to bet its likeness, and then die for ever" (Sedgwick [1860] 1973, 165). Equating men and animals, for many, was simplistic credulity.

Evolution, according to ID proponents, defies common sense and is virtually impossible. ID advocates use the analogy of a tornado in junkyard resulting in the assembly of a 747 jet to describe evolutionary probability (Phy-Olsen 2010, 75). The probability is just too small to have happened by chance, in this view. In rebuttal, Elliot Sober (2002) makes a strong case for the improper uptake of probability in ID and notes some logical flaws: just because evolution is improbable (or "very improbable," as Sober writes [9], though he is not suggesting that such is actually the case) does not mean that it is impossible; furthermore, even if an observation or premise is very improbable, it does not necessarily follow that the hypothesis is also. He writes that "to say whether an observation counts as evidence against evolutionary theory and in favor of the hypothesis of intelligent design, one must know what each predicts about the observation" (12), knowledge that is extremely difficult (if not impossible), in this case.

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artistic capabilities, "it is altogether removed from utility in the struggle for life, and appears sporadically in a very small percentage of the population; the majority being, as is well known, totally unable to say a witty thing or make a pun even to save their lives" (472). Wallace suggests that the development of these faculties is dependent on the material laws of evolutionary development thus are consistent with the theory of natural selection though requiring a different developmental source: "for this origin we can only find an adequate cause in the unseen universe of Spirit" (478).

ID advocates repeatedly claim that there is a lack of intermediate forms discovered in the fossil record to validate evolutionary theory (Meyer 2013). ID adversaries respond that there are indeed many transitional forms, but since ID advocates do not utilize a Darwinian framework of reference, they appear merely as fully formed entities with no transitional significance (Pennock 2001; Miller 2008). This was a common Darwinian-era critique, but it had more weight at that time as the fossil record was still rather small (Hull 1973, Ruse 2006). Though the fossil record is now more extensive, the issue of intermediate forms still garners controversy, however, particularly since Stephen Jay Gould (1977) called attention to the limited number of intermediate or transitional forms and suggested that punctuated equilibrium was a more apt description of evolutionary process than the slow gradual change suggested by Darwin. In a later publication, Gould (1981) writes that "[T]ransitions are often found in the fossil record. Preserved transitions are not common -- and should not be, according to our understanding of evolution...but they are not entirely wanting, as creationists often claim" (5).

ID advocates also list various traits or organisms that they claim evolution cannot explain. In the Dover trial of 2005, Michel Behe testified that evolution could not explain the blood clotting mechanism, for example, but in response, the opposition presented him with a literal stack of more than fifty publications offering an evolutionary explanation. The point here is that there is a distinction to be made between what evolutionary theory can explain and the explanation(s) that ID proponents will accept.

4.2.3 Discussion of the Conceptual Toolbox

Thus far I have outlined a number of continuances between ID and Darwinian-era critiques, and I have distinguished ID tenets from evolutionary critiques, but this distinction is weak and the continuance is stronger than what I have so far suggested. Indeed, I would argue that the antievolution elements are largely indistinguishable from the positive assertions of ID.

Behe's argument for irreducible complexity is really a version of the incipient stages argument, for example. Irreducible complexity posits that all working pieces must be in place in order for an organism to have a fitness value amenable to natural selection, and the incipient stages argument posits that organisms in the developmentmental process of evolution would go through a period of time in which their features and traits are underdeveloped, thus they would be weak organisms, have a low fitness value, and not be a viable target of natural selection. In other words, organisms in developmental stages would not have all their parts assembled and functioning properly, therefore they would not be functioning optimally and would be pruned out by natural selection.

The ID tenet of specified complexity is similar. That the meaningful arrangement of parts, or specified complexity, cannot be explained in any way except by design, is merely the flipside of the antievolution argument that chance and random natural forces of evolution cannot produce such intricate phenomena as the blood clotting mechanism. If there appears to be a strong overlap between ID tenets and evolutionary critiques it is because the two are one and the same.

The impasse is created by the symbolic deployment of science without scientific content, a science pageantry of sorts. This is to say that ID proponents utilize ideas and

concepts from their toolbox but not the materials to which the tools refer. This section contributes to the argument that ID recycles outdated challenges to evolutionary theory, it is as Kitcher (2007) argues, a dead science. Furthermore, it is not in dialogue with a broader scientific community. It is detached from mainstream science and thus ID science is something different. It is the scientific look without relevant scientific content that leads to the use of scientific authority as legitimation of religious thought.

4.3 Science as a Source of Authority

In the contemporary world of competing ideas and worldviews, an appeal to scientific authority is one way to anchor thoughts and beliefs to a set of epistemological assumptions largely understood as pertaining to universality and neutrality. Along with these ascribed traits, science often seeks answers to the "big" questions generally posed by religions, such as the origin and destiny of humanity (whether or not science can actually answer such questions is a slightly different issue), and as such, it is deeply entangled with religious thought (Lewis 2010, 11). In the tradition of early 20th century creationism, science as a source of authority is one of its roles in the ID discourse. James Lewis (2010) discusses several ways in which religious movements appeal to the authority of science. such as: academic association, terminological/rhetorical, and the construction of an alternative science. ID makes widespread use of each of these.

4.3.1 Appeal to Scientific Authority via Academic Association

One way in which ID advocates appeal to science as a source of authority is by emphasizing the academic credentials and associations of leading proponents.[42] As Lewis (2010, 20) points out, accentuating academic affiliations is not entirely an appeal to scientific authority because a certain degree of power and prestige is awarded to academic achievement regardless of what the area of study is, but ID advocates generally align the two. In the first case, ID writers become understandably defensive when the scientific status of ID or its proponents are questioned. In one article entitled "Misframing Intelligent Design: Falsely Painting ID Advocates as Anti-Science," for example, ID advocate Casey Luskin (2010) responds to what he claims is a case of ID proponents getting the "fringe-treatment" and argues against this by referencing several prominent Discovery Institute Fellows and ID advocates:

> Did Richard Sternberg, who hold two PhD's in fields related to evolution, earn his degrees by rejecting "much of modern science"? Does Ralph Seelke at the University of Wisconsin, Superior, researching the limits to bacterial evolution, reject "much of modern science"? How about Guillermo Gonzalez, who fled Cuba to come to the U.S. and got a PhD at the University of Washington, and then discovered multiple extrasolar planets? Does he reject "much of modern science"? [sic] (writing errors in original document) [43]

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[42] This had been an important strategy of earlier creationists as well, and when scholars of such persuasions were in short supply, those with approximately similar views or with beneficial elements of their work were enlisted (often unwittingly) by an inclusion of their work or parts of their work in creationist arguments (Numbers 2006, 66).

[43] While I cannot comment on the scientific credibility of any of those mentioned by Luskin, it can be pointed out that Richard Sternberg was at the center of a peer-review controversy when, as the editor of *Proceedings of the Biological Society of Washington*, he circumvented a number of regular peer-review procedures and published a pro-intelligent design article by Stephen Meyer. In response to this issue, the Council of the Biological Society issued the following statement: The Council, which includes officers,

What is interesting about this type of defense is that the writer emphasizes the source of the credentials but not the present affiliation.

Richard Sternberg's case is particularly noteworthy. In a 2008 autobiographical essay available on his personal website, Sternberg carefully documents his transition from Darwinism (and atheism, coincidentally) in his earlier education and academic career to ID (and non-atheism? It is not clear except that by the end of the essay he uses the capitalized pronoun "His" to refer to God when speaking of God's work in the natural world). The point being that *where* one receives one's degree is not necessarily indicative of one's perspective on science or anything else several decades later. Sternberg is currently funded by the Discovery Institute to conduct research at the Biologic Institute, a Discovery Institute affiliate.[44] Of course there may indeed be valuable scientific insights that come from the work currently being done at this institute, and that is a question that scientists in a broader context can address if they are able to access and evaluate such work. For now, however, starting from an ID framework is largely suspect to many, and, as the Biologic Institute's "About" page states, "the science establishment has proven its

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elected councilors, and past presidents, and the associate editors would have deemed the paper inappropriate for the pages of the Proceedings because the subject matter represents such a significant departure from the nearly purely systematic content for which this journal has been known throughout its 122-year history. For the same reason, the journal will not publish a rebuttal to the thesis of the paper, the superiority of intelligent design (ID) over evolution as an explanation of the emergence of Cambrian body-plan diversity. The Council endorses a resolution on ID published by the American Association for the Advancement of Science (http://www.aaas.org/news/releases/2002/1106id2.shtml), which observes that there is no credible scientific evidence supporting ID as a testable hypothesis to explain the origin of organic diversity. Accordingly, the Meyer paper does not meet the scientific standards of the *Proceedings*. The full statement can be read here: https://web.archive.org/web/20070926214521/http://www.biolsocwash.org/id_statement.html. Last accessed June 28, 2014.

[44] This information is part of the biography section of Sternberg's personal webpage. For full details see: http://www.richardsternberg.com/biography.php. Last accessed June 28, 2014.

opposition to this time and time again."[45] Thus far ID advocates have not succeeded at becoming accepted in mainstream science, as their theory has been largely rejected as science. That ID is rejected from mainstream science is not surprising given the impasse or lack of dialogue established by key advocates of ID as discussed in the previous section.

It would seem, therefore, that an appeal to science via asserting credentials would be of little persuasive value to mainstream scientists. For laypeople, however, credentials can be very persuasive, and in line with antievolution methodology, the Discovery Institute has compiled a hefty roster. In a quick tally of the educational background of ID fellows on the Center for Science and Culture portion of the Discovery Institute website (the section that deals explicitly with ID), forty-one are listed, seven of which are biologists of some fashion, seven are scientists in other domains, and the others comprise a mix of law, philosophy, and political science, among other disciplines.[46] The weight of this credential collective overwhelms the particularities of the educational orientation of individual members.

Besides listing and asserting the academic credentials of fellows, ID advocates enlist the support of a few highly acclaimed scientists. On the blog "Uncommon Descent" where a number of well-known ID advocates frequently publish, writers often identify scientists that they interpret as supporting ID in some capacity. For example, an article entitled "Seven Nobel Laureates in science who either supported Intelligent Design or

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[45] This page can be found here: http://www.biologicinstitute.org/about. Last accessed June 28, 2014.

[46] This information was gathered directly from the Discovery Institute website: http://www.discovery.org/csc/fellows.php.

attacked Darwinian evolution" appeared on April 7, 2012.[47] The author lists the winners

he refers to and includes some textual reference and a short analysis to justify the claims

of the title. Only one of the listed scientists is living, so direct clarification of any of their

work in this regard is somewhat problematic. Nonetheless, this tactic fits neatly into the

appeal-to-scientific-authority toolbox.

4.3.2 Appeal to Scientific Authority via Technical Language and Formats

An appeal to the authority of science is also facilitated through the technical

language and formatting of ID media. In browsing the titles of books by ID proponents,

it becomes unclear whether proving ID or disproving evolution is more important, and I

would be inclined to select the latter because Darwin and evolution are the focus of the

majority of the titles.[48] The examples are many: *Darwin's Black Box: The Biochemical*

Challenge to Evolution (Behe 1996), *Uncommon Dissent: Intellectuals Who Find*

Darwinism Unconvincing (Dembski 2004), "Evolution as dogma: the Establishment of

Naturalism" (Johnson 2001), *The Politically Incorrect Guide to Darwinism and*

Intelligent Design (Wells 2006), just to name a few. These works sport various images of

Darwin, apes, DNA, fossils, and the like and, in Canada, can be found in the "science and

nature" section of the large booksellers (see Figure 3).

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[47] See here for full article: http://www.uncommondescent.com/intelligent-design/seven-nobel-laureates-in-science-who-either-supported-intelligent-design-or-attacked-darwinian-evolution/. Last accessed June 28, 2014.

[48] There are quite a few sites that list popular ID titles. Some of the ones I have looked at include: Wikipedia (http://en.wikipedia.org/wiki/List_of_works_on_intelligent_design), Amazon.com (http://www.amazon.com/s/ref=nb_sb_noss_1?url=search-alias%3Dstripbooks&field-keywords=intelligent+design), and goodreads.com (http://www.goodreads.com/shelf/show/intelligent-design). Last accessed June 28, 2014.
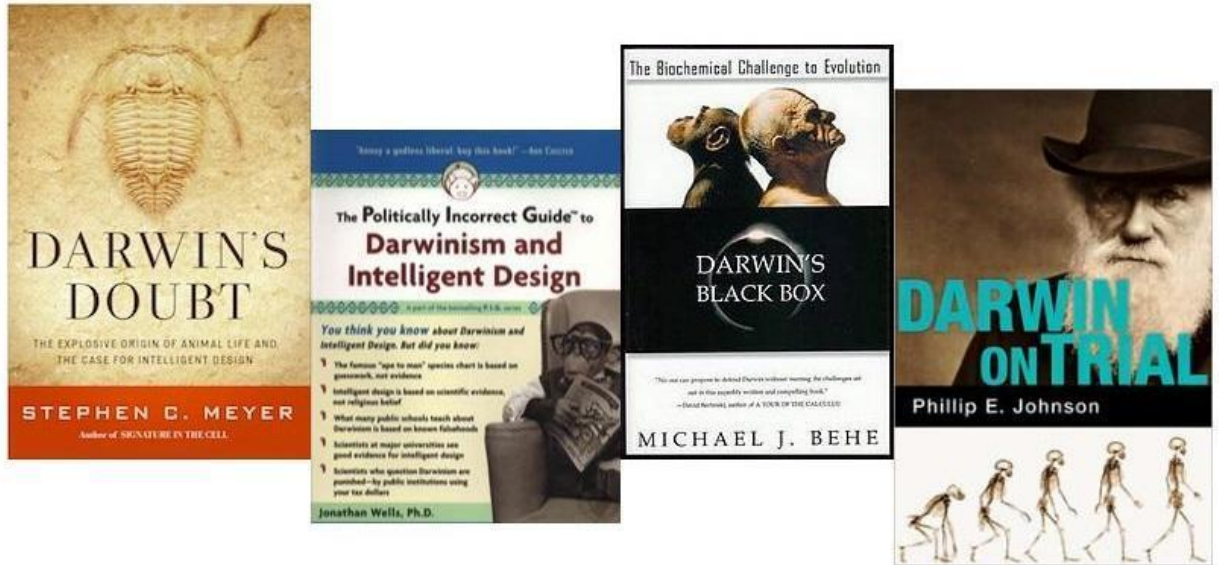
Figure 3: Cover Images of Popular ID Books. Darwin and evolution are key features in these images.

ID media utilizes what Olav Hammer (2004, 243) calls the "Rhetoric of Rationality" as a means of leveraging scientific authority. ID books and publications routinely employ elaborate mathematical proofs, charts, technical drawings, statistics and more as though they are participating in and are on par with mainstream science.[49] ID video resources are particularly striking as they employ elaborate animated models and video footage of minute living organisms and cellular components.[50] This is not to say that mainstream scientists do not participate in the rhetoric of persuasion as well. Indeed much of the scientific language, presentations, and even the scientific paper itself (that typically includes arguments to authority, minimally by the citing of various supporting scientists) can be read as an exercise in persuasion as much as a presentation of new

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[49] The Intelligent Design and Evolution Awareness Center, under its FAQ section lists a number of explanatory articles that provide numerous examples of the scientific framework in which ID placed. The full site can be viewed here: http://www.ideacenter.org/resources/faq.php. Last accessed June 28, 2014.

[50] On their Intelligent Design resources page (http://www.intelligentdesign.org/resources.php), the Discovery Institute provides links to numerous ID videos. Many of these are posted on affiliated YouTube sites and can be freely accessed. Last accessed June 28, 2014.

knowledge (Latour 1987). The point, however, is that ID is largely epistemologically detached from the content of that which it is using to using to bolster its credibility, and although it seeks to position itself as participating in the common scientific enterprise like any other scientific subgroup, it is something quite different as ID proponents have constructed it. This is to say that ID proponents portend to utilize science, but not in the ways in which "science" is commonly understood.

4.3.3 Appeal to Scientific Authority via the Creation of an Alternative "Science"

ID advocates propose ID as an alternative to evolution and have built up an alternative science as the framework of reference. Lack of participation in mainstream scientific discourse evidenced by a lack of peer-reviewed articles is often cited as the reason why ID is not science (Ravitch 2010, 166). Part of the ID movement has focused on creating journals, conferences, and other academic forums for the dissemination of ID-positive material (Forrest and Gross 2004). ID advocates counter that there are indeed a great number of peer-reviewed ID articles and that this number is growing rapidly. In an article entitled "PEER-REVIEWED & PEER-EDITED SCIENTIFIC PUBLICATIONS SUPPORTING THE THEORY OF INTELLIGENT DESIGN" (all caps in original on website), a Discovery Institute staff writer begins by suggesting that ID is a young science and that "recognition in peer-reviewed literature is not an absolute requirement to demonstrate an idea's scientific merit" (np).[51] Nevertheless, the author continues to list and annotate more than twenty articles from various publications. What is immediately

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[51] This article can be found here: http://www.discovery.org/a/2640. Last accessed on May 29, 2014.

apparent is that the bulk of these publications come from the alternative network of "science" publications established to produce "peer-reviewed" ID materials.

In this section, I have outlined several ways in which ID utilizes science as a source of authority. ID advocates have honed the antievolution methodology by highlighting academic credentials and associations, making their arguments in sophisticated and technical scientific language, and creating an alternative network of scholars and forums through which ID work is vetted. As one author writes: "What the ID proponents have done is repackage these old ideas without explicit reference to the divine, sprinkle in some fancy terminology, and apply the watchmaker idea to new contexts, such as biochemistry, to make it all sound more scientific" (Ravitch 2010, 27).[52] Lewis (2010) argues that religions often hide under scientific authority as a means of both legitimation and justification that is somewhat indifferent to science proper, and this seems to be true of ID.

There is an odd tension that runs through this discourse. As one browses ID articles and publications, a double image of science appears: on one hand there is much emphasis on scientists who accept or assert ID while at the same time there is a rather steady critique and undermining of science, particularly evolutionary science and

[52] This indeed seems to be the case, though the watchmaker argument seems more robust. Behe (1996) typically illustrates his argument for irreducible complexity by referring to the bacteria flagellum that is comprised of intricately connected parts such that it functions as an outboard motor, of a sort. Behe's argument rests on the premise that if a part is removed then the flagellum is non-functional. In this argument, systemic fragility or lack of redundancy is the hallmark of the designer. One might easily envision a missing piece of a watch, say the faceplate, or the maybe even the hour hand, and the watch could still function to keep and tell the correct time, so long as the observer devises some method for interpreting it.

scientists in general.[53] This tension leads me to suggest that science is more than just a

source of ideas and authority.

4.4 Science as Defense

The role of science within ID discourse, at first glance, appears to be a bit

contradictory, but things are a bit more complex than they may first appear. On one hand,

science, or a version of it as constructed by ID proponents, is utilized as a source of

validation and justification, but on the other hand science is criticized as a domain of the

elite who utilize science to prop up their power and dominion.[54] This tension inspires a

second look at the role of science in this discourse: Is it a valuable source of epistemic

authority or a weapon of manipulation for the powerful and a product of this elite group's

agenda, as ID proponents claim?

This section will examine this apparent contradiction in greater detail. This

contradiction would seem to render science impotent as an epistemological resource

because ID advocates appear to attack the very thing that they use to bolster their own

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[53] There also seems to be an increase of critique of environmental sciences apparent throughout the ID discourse as evidenced in numerous articles on the Discovery Institute website. Investigating connection of this critique to ID will need to be left for a future project.

[54] One may argue that there is symmetry to this statement that weakens the claims I make in this chapter. That is, I use science as a source of validation and justification while claiming that ID is utilizing science to prop up their ideology and dominion; however, the key point of this chapter is to bring forth the ways in which "science" is molded and adapted to the particular aims of ID advocates to the extent, as I will argue in depth shortly, that "science" becomes a distinct fictional character that ID advocates use to simultaneously focus their claims and shield themselves from scrutiny. I am not seeking to put forth a specific conceptualization of science (though I likely inadvertently and unavoidably do so to some extent); rather, I am seeking to show the pliable nature of the conceptualization utilized in ID discourse. This is not to say that mainstream scientists or anyone else do not do similar things, they likely do, but they are not the current focus. See Footnote 26. I am not both utilizing and criticizing the same thing, and neither are ID proponents, even though it appears this way at first glance. This is what I aim to show in this section.

claims. The two, however, are not the same: religious appeals to scientific authority are not epistemic claims but political actions. ID advocates are less interested in the epistemic value of science for their project than in effecting change in public consciousness.[55]

The basic argument of this section is as follows: ID advocates challenge traditional boundaries of science by drawing on critiques available from science studies literature, but this challenge is a defensive strategy that allows ID advocates to conceptually demarcate their "science" from the "other." In so doing, ID advocates shield their own epistemic claims while playing on the sympathies of their audience at the same time.

To flesh out this claim, I first describe the critique of science that ID advocates make. I utilize the transcripts of the Dover trial as the basis for articulating the positions of ID proponents and mainstream scientists. The Dover trial is particularly useful for this task because the positions are clearly articulated and come directly from the testimony of key personalities involved in this debate. I am not, at this time, providing a thorough overview or analysis of the trial itself, however. I am using it as a resource for reporting two conflicting positions on the meaning and nature of science. After I lay out the two positions, I then explore some of the underlying issues to show that the ID critique resonates with science studies scholarship. Finally, I explore the implications of this

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[55] ID proponents are by no means the first to use science in this way. In the previous chapter I briefly discussed Huxley's advocacy for political change using Darwinian evolution as his authoritative foundation, despite the fact that he strongly disagreed with natural selection—the key element of Darwin's theory. ID differs in this regard, however, in that proponents do not overtly assert political change but rather subvert it to the assertion of what they see as a credible scientific theory. Surely, even in this regard however, ID advocates are not the originators of this tactic.

critique, specifically, that ID critiques science in ways not unlike critics of science more generally, but their critique is a defense mechanism that deflects attention away from their own epistemic shortcomings. As we will see, the ID critique appears to be a case of "fighting science with science," to borrow another writer's words from a different context (Hersh 2010, 513).

4.4.1 Positioning

ID advocates seek to challenge the definition of "science" in an attempt to move current boundaries and to re-conceptualize it so as to encompass ID epistemological commitments. As discussed in Chapter Three, the Dover trial of 2005 played a key role in determining the legal status of ID in terms of its suitability for the science classroom in that the definition of "science" was a key issue. This section utilizes the transcripts of this trial and the testimony of some significant ID advocates and opponents to present the ID critique of science. The plaintiffs are those arguing against ID as science and the defendant is the Dover School Board—those promoting ID. It is important to note that this section is an account of the positions of both parties and is not yet an evaluation or analysis of these positions. That follows in the next section.

Science is method, according to the plaintiffs in the Dover trial. The first witness to testify for the plaintiffs was Kenneth Miller, co-author of the textbook at issue. Miller's testimony focused largely on the definition of "science" which explicitly sets out its scope and boundaries. In his testimony, Miller states that "science tries to provide natural explanations for natural phenomena. So one of the most basic rules of science is that we tend [sic]—what we require, the practitioners of science seek their explanations

in the world around us, in things we can test, we can observe, and we can verify"

(*Kitzmiller v. Dover* Sept. 26, 2005, 59:17-22). Miller goes on to explain that "science" is

that which is repeatable, testable, and open to critique from other practitioners. Science is

thus defined procedurally.

Robert Pennock, philosopher of science and expert witness for the plaintiffs,

provided an interpretation of the concept behind Miller's definition. Pennock explains

that science is defined methodologically in accordance with the conventions of empirical

inquiry (Sept. 28, 2005, 24:20-23). In philosophical terms this processes is referred to as

"methodological naturalism, and the idea is that this is a form of method that constrains

what counts as a scientific explanation." "Philosophical naturalism" is distinguished from

"methodological naturalism" with the former referring to a metaphysical statement on the

reality of the cosmos as being only material in nature and the later referring to the

confinement of scientific explanation to natural causes. Philosophical naturalism excludes

the possibility of supernatural entities and is not an element of standard scientific

practice. In other words, although science deals only with the material world, it makes no

comment on ultimate reality. On this account, science stakes the boundaries of what is

possibly knowable, in accordance with its established criteria, and ID is excluded because

it refers to entities and phenomena outside of this arena.

The application of methodological naturalism contains significant advantages,

according to the plaintiffs. Of particular importance is the reliance on empirical evidence

that supersedes religious injunctions. In other words, methodological naturalism allows

science to proceed in ways that might otherwise be constrained by religious belief and

authoritarian influence. "That's probably what's most characteristic of the scientific

revolution, rejecting appeal to authority and saying we will appeal just to nature itself. We'll appeal just to the evidence, the empirical evidence," says Pennock (Sept. 28, 2005, 27:16-20). In this way, science belongs to the realm of common experience and not privileged ideology.

Pennock points out that utility is another advantage offered by science in its standard definition. Pennock argues that the utility of methodological naturalism is significant and attests to its value and credibility: "When you discover these natural regularities, these causal regularities, you're then able to use them in pathology and so on" and this "is crucial, because it makes a difference. It lets us apply the conclusions, the discoveries that scientists make" (30:24-31:12). The scientific revolution, typically characterized as a movement from appeals to authority to the sufficiency of empirical authority (Shapin 1996), brought forth an immense increase of knowledge and there is little doubt of the connections between the refining of scientific methodology and the proliferation of ideas and technology that emerged and continues to accrue at a staggering rate.

On this account, another advantage of methodological naturalism and its adherence to the standards of empirical evidence is that it allows for open access to the scientific enterprise. Empiricism takes on the appearance of a universal language or a universal forum for practitioners whereby a system of checks and balances—otherwise known as peer-review—are established in order to validate or disqualify scientific knowledge claims. Miller states that he thinks that "science might be the closest thing we have on the planet to a universal culture" (Sept. 26, 2005, 63:3-5), and that "the peer review process is the essence of the scientific process" (39:23-4). This process heightens

scientific credibility because it not only witnesses to the integrity of the knowledge claim

but also the integrity of the claimant. Pennock explains:

> What one expects in science is that one is going to be
> testing hypotheses against the natural world, and what
> methodological naturalism does is say we can't
> cheat...We're forced to restrain ourselves to looking for
> natural regularities. That's part of what it means to be able
> to give evidence for something. You've undermined that
> notion of empirical evidence if you start to introduce the
> supernatural. (Sept 28, 2005, 30:8-31:13)

Methodological naturalism thus ensures utility and credibility making its worth appear

insurmountable.

To summarize the plaintiff's position, science is defined in terms of

methodological naturalism. Practitioners of science limit science to natural phenomena

discerned via empirical evidence, explainable by regularities in nature, and subject to

verification and falsification. That science is thus defined is crucial: it provides a forum

for all practitioners to participate in the scientific enterprise regardless of particular

beliefs and religious commitments; the verification/falsification criteria provides a check

and balance system whereby knowledge claims can be either endorsed or discarded; and

it limits science to the realm of natural phenomena thereby supplying grounds for a

consistent and reliable assessment of regularities that can then be practically applied and

implemented into various technologies. On this account, it seems that science is as

scientists do.

Science is largely a rational exercise, according to the defendants. ID advocates

do not entirely quibble with the empirical bases of science. At issue from their

perspective is the conceptual framework in which the empirical world is interpreted. In other words, from an intelligent design perspective, "science," as a more complete source of knowledge, must be re-conceptualized in such a way as to be open to the inclusion of supernatural description as part of its explanatory toolbox. ID advocates routinely suggest that although science may not be able to identify or qualify the designer, it can attest to the products or work of supernatural designer.[56] To the rational observer, according to this view, "the physical empirical evidence, the scientific evidence, points to a conclusion of intelligent design" (*Kitzmiller v. Dover* Oct. 17, 2005, 33:5-7). For ID proponents, this is the bottom line.

Michael Behe, a biochemist at Lehigh University in Pennsylvania, was the first expert witness for the defense in the Dover trial. Behe is best known for the formulation of irreducible complexity theory, as described in section 4.2.1. In regards to science specifically, Behe defines it as the conjoining of "physical, observable, empirical facts about nature plus logical inferences" (Oct. 17, 2005, 112:6-8). Reliance on "logical inferences" is meant to refer to inductive reasoning or as Behe explains it, the extrapolating "from what we know to instances of what we don't know" (115:6-7). Using the discovery of DNA by Watson and Crick and the formulation of the Big Bang theory as examples, Behe explains that experiences with known phenomena allow scientists to discern understandings of other phenomena with apparent commonalities. Observation alone is insufficient and must be supplemented with rational interpretation.

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[56] A fairly complete overview of this assertion appears on the ID website entitled "Uncommon Descent." Details can be found at: http://www.uncommondescent.com/intelligent-design/detecting-the-supernatural-why-science-doesnt-presuppose-methodological-naturalism-after-all/.

ID proponents in this trial argued that the standard definition of science was too limiting and the exclusion of ID from the boundaries of legitimate science is not necessarily related to its evidentiary capacity. Steve Fuller, testifying for the defense in the Dover trial, argued that science is defined by the conceptual context in which empirical evidence is interpreted and by the social context of who does the interpreting.[57] In other words, empirical observation is filtered through the conceptual framework of the observer, and this framework is formed in and through the social/epistemological networks in which the observer is situated. Fuller argues that throughout the history of science reference to the divine has provided a fruitful conceptual backdrop. In the specific case of ID, Fuller argues that religious motivations are insufficient grounds for barring a proposed scientific theory, and furthermore, ID is concerned with salient phenomena that evolution fails to adequately address (Oct. 24, 2005, 115:24-116:17). Fuller bolsters his position by bringing to bear insights from the history of science to argue that belief in a monotheistic God, in whose likeness and image humanity was created, provided an epistemological gateway into the inner workings of nature and a window into the mind of God. This belief, or some version of it, was highly influential in initiating and sustaining scientific inquiry throughout history. Fuller accuses modern science of being progressively exclusive and historically ignorant. On these grounds, Fuller provides support for ID as a legitimate scientific project and suggests that it is beneficial as a broadened educational perspective when it opens the door to inquiry beyond the constraints of contemporary hegemonic discourses in science.

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[57] Steve Fuller is not an ID advocate as such. He is a proponent of social epistemology and he viewed his participation in the trial as a way to promote science studies and social epistemology (Corbyn 2006).

To summarize the defendants' position, the dispute between the accepted definition of science and ID is about boundaries and the role of rational inference. ID is excluded from science in its standard articulation because by definition it refers to something outside of the natural world, thus science cannot speak to the validity of its claims. ID proponents counter that such restrictions hamper the scientific enterprise by capping inference resources; furthermore, the scientific enterprise has a proven track record of success within a religious/scientific framework and excluding such perspectives is a political act more so than a straightforward matter of evidence and truth.

4.4.2 Underlying Issues

It seems to me that in the previously described contest, "science" is somewhat idealized by both sides of the debate. The idealization of science as a neutral arbitrator of truth is precisely why it is often leveraged as an authoritative source of knowledge claims, but, as scholars in the social studies of science have long proclaimed, such idealization is not representative of how science is "really" done. ID advocates utilize some well-worn critiques of science from the social studies of science, and as such, much of their critique is reasonable. This subsection will identify these critiques, and this identification is important for at least two reasons: 1) in the ID discourse these critiques are typically tightly packaged with the assertion of the validity of ID in the face of the identified shortcomings of common understanding of mainstream science, and 2) this critique of science allows ID advocates to demarcate themselves from mainstream science which shields their own "science" from the criticisms that they launch at others. For ease of explanation I have divided these critiques in three categories: objectivity,

methodology and trust, which I will expound on in turn. The Discovery Institute boasts more philosophers of science and science studies scholars than biologists on its roster of associated fellows, and so it is not surprising that an ID-based critique draws on this much broader scholarship.[58]

A key element of this issue is the question as to whether knowledge claims are independently true or socially constructed. Although this is a problematic dichotomy that I will address shortly, it is an important question because, to many, "independently true" implies that facts are beyond the scope of human intervention whereas "socially constructed" implies that the facts are not hard and fast but can or perhaps should be changed.[59] This issue of "independently true" however, remains challenged, allowing ID advocates a space in which to attack mainstream science.

Scientific objectivity has been a hotly debated topic within science studies. ID advocates challenge the notion of objectivity in a way similar to those in feminist epistemology and science studies more generally. Traditional notions of objectivity tend to involve the idea that, given the proper execution of the scientific method, empirical evidence will reveal the facts of the matter, and this is certainly the concept of objectivity that was in circulation in the Dover Trial. For example, in his testimony, Kenneth Miller

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[58] The complete list and biographies are available on their website: http://www.discovery.org/csc/fellows.php. Last accessed June 28, 2014.

[59] It seems to me that there is at least some degree of social construction in all knowledge claims, even basic ones. For example, in *Sexing the Body,* Anne Fausto-Sterling (2000) explains how the "fact" of gender—male and female—is constructed from beliefs about the way the world is. Babies born with ambiguous genitalia routinely undergo various physical, social, and psychological interventions such that they are molded into the conventional gender dimorphic framework (58-60). In this way, social concepts of gender are applied to the physical body and the body then reinforces the social concept of gender as dimorphic. Fausto-Sterling's work suggests that sex and gender are not basic facts but are complex networks of beliefs and practices. Indeed, Fausto-Sterling suggests that a system of multiple sexes and genders would more aptly encompass the range and diversity of human experience.

explains a case involving the chromosomal structure of primates. As the story goes, Darwinian evolution posits the notion of common descent, but humans have only 23 pairs of chromosomes whereas other great apes have 24. Miller argues that if the hypothesis of common descent is indeed accurate then there must be a way to account for the missing chromosomes, and in examining the chromosomal structures of each, scientists discovered that the number two chromosome in humans is actually two chromosomes fused together. "Evolution has made a testable prediction and passed," Miller triumphantly announces (Sept, 26, 2005, 86:4-5). A properly executed scientific method, the plaintiffs would say, means that a scientist would make observations of the world, formulate a hypothesis, and then test that hypothesis for verification or falsification against the natural world.

The problem that ID proponents hit upon, however, is that empirical observation is not typically as straightforward as suggested by Miller's testimony. The social study of science, stemming from Thomas Kuhn through the work of Bruno Latour and beyond, traces a vast network of relations between people places and things involved in the development of what eventually gets presented as a simple scientific fact, claim, or idea. In this account, the process of science is messy and involves contests and disputes between various social and political factions. Who wins and who determines the facts of the matter influences what the facts of the matter are.

This is precisely the point that the defendant witness Steve Fuller attempts to make in the Dover Trial. He says:

> It's very rare to actually find a decision point where you
> say, well, some crucial test has been done, and this theory

has been shown to be true, and this one has been shown to
be false. But rather, what you have is kind of a statistical
drift in allegiances among people working in the scientific
community over time, and especially if you add to it
generational change. What you end up getting is kind of a,
what Thomas Kuhn would call, a paradigm shift; that is to
say that, where over a relatively short period of time,
simply by virtue of the fact that the new people come in
with new assumptions and new ideas, that you actually do
get a massive shift, but not necessarily because there's
ever been any decisive moment where someone has
proven one theory to be true and another theory to be
false. (Oct. 24, 2005, 12:3-19)

Science in this account is not just people testing ideas against nature, as though somehow

separate and distinct from it. Rather, people are part of nature, they are an element of the

object of inquiry and methodology is thus inevitably involved in a complex set of

relationships, not the straightforward image presented by Miller, as I will explain.

The definition of "science" by the plaintiffs invokes a distinction between the

context of discovery and the context of justification. The former refers to the sources of

questions and avenues of inquiry which is distinguished from the processes of

verification or falsification. The former is typically construed as subjective, the latter as

objective. In the plaintiff's construction of science, the context of justification is

protectively isolated from the context of discovery such that challenges of discovery do

not impact the fact-status of a knowledge claim.

Science studies, however, have posed a formidable challenge to this distinction.

Thomas Kuhn, suggests one scholar, dismissed this conceptual divide entirely by posing

the notion of "normal science" as an aspect of puzzle solving such that validity or matter-

of-factness is predetermined (almost) by the paradigm from which questions are derived

(Bird 2004). Bruno Latour (1987) says something similar by arguing that science

transpires in networks that come into being via action compelled by the dynamic adaptive interests of actors and actants—human and non-human entities alike. Scientists, laboratories, and instruments seem to constitute an intricate interplay of force and resistance such that context and content are fused into a single comprehensible matter-of-fact. Empirical evidence is vetted through these networks and its validity is crucially dependent on them.

Feminist science studies scholars argue that there is no such thing as "objectivity" in the traditionally understood sense. Scholars in this domain assert that knowledge is constrained by one's location, thus is always partial and limited, and the appearance of neutrality masks important contingencies (Grasswick 2011). "If knowledge is equated with a neutral point of view, then those who have the power to claim knowledge can mask (albeit unwittingly) their particular perspective as the neutral point of view" (Grasswick 2011, xix). In this way, the history of the exclusion of women from education and the scientific enterprise has produced a science that in many ways employs, explains, and justifies male bias. This is not to say that objectivity should be abandoned for relativism, a caution made most notably by Donna Haraway (1988). Rather, feminist theory tends to reconstruct the notion of objectivity such that various forms of inclusion provide multiple perspectives that act as a type of check on background assumptions that may be rendered invisible from certain locations.

Although there is a resonance with feminist science studies, the inclusion of a wide variety of perspectives does not appear to be the interest of ID advocates. In this account, objectivity would be improved by the broadening of the definition of "science" which, according to ID advocate Philip Johnson (2001), is now secured via scientism.

"Scientism," according to Johnson, is "a philosophical doctrine which asserts arbitrarily that knowledge comes only through the methods of investigation available to the natural sciences" (72). Broadening the definition of "science" would open a new realm of empirical resources thus redressing the need for scientists to be restrained by conceptual biases in the quest for explanation.

Critics of scientism argue that there are many meaningful questions that cannot be answered by measuring or counting in typical scientific fashion and currently the definition of science restricts inquiry (Johnson 2001). The question at the heart of the position of those who object to scientism is whether or not there is inherent meaning and purpose in the living world and how one goes about asking/answering such question. Ken Miller concedes that science is limited in this regard. He says that "these questions simply lie outside the purview of science. It doesn't say they're not important, it doesn't say that any answer to these is necessarily wrong, but it does say that science cannot address it" (*Kitzmiller v. Dover* Sept. 26, 2005, 64:13-25). In other words, the limiting of knowledge to the objective realm renders inquiry of such domains as meaning and purpose off limits to science making it very difficult to assert anything concrete on its basis.

Yet, science studies scholarship has asserted time and again that the processes of science are intricately connected to the subjective persuasions of its body of practitioners, and the pure straightforward self-evidentiary characterization of science, such as Miller purports, elides such connection. This dichotomy engenders a modernity-friendly image of science as "pure," shielded from the impacts of the oscillating world of subjectivity. Bruno Latour (2010) argues that the appearance of purification and separation that has

come to symbolize modernity and the myth of pure science is actually structured by a messy conglomerate of networks of people, places, and things that perform various roles. Science structures these networks while simultaneously being characterized by them. The purer the image the greater messiness it hides. In Miller's comment, the dichotomy between material and conceptual worlds is foregrounded and the messy interpenetration upon which such purification and separation are situated lies hidden in the background.

ID advocates are certainly not the only ones to challenge what is often perceived as a dogmatic materialism intrinsic to modern science. Recently, several authors have made similar comments.[60] Of particular note are *Aping Mankind* (Tallis 2012), and *Mind and the Cosmos* (Nagel 2011). In these works, the authors, though not intelligent design proponents, argue against the over reliance on materialism for explanations of human experience (Tallis 2012) and conscious minds (Nagel 2011). Both of these authors evoke a non-reductionist complexity framework that resonates with an emergentist concept put forth earlier by Michael Polanyi who claims that "the richness of life cannot be reduced to simple mechanical and physical processes of natural selection and genetics as the neo-Darwinians do" (Paksi 2013, 54). They might well agree that science, at least in its traditionally understood capacity, cannot speak to meaning and purpose in the universe.

Perhaps, however, science à la Miller "misspeaks." In his recent book *The Moral Landscape* (2011), controversial author Sam Harris offers an argument that nicely captures my central point in this section. He writes: "Questions about values—about meaning, morality, and life's larger purpose—are really questions about the well-being of

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[60] The authors discussed here make it explicit that they are not aligned with the ID movement, though Nagel (2012, 10) admits to being inspired by their criticism of science even though he does not accept the designer hypothesis.

conscious creatures. Values, therefore, translate into facts that can be scientifically understood: regarding positive and negative social emotions, retributive impulses, the effects of specific laws and social institutions on human relationships, the neurophysiology of happiness, etcetera" (1-2). Now it is highly unlikely that this self-proclaimed atheist writer and ID advocates would see eye-to-eye; however, a major bone of contention for ID advocates is the fervent adherence to materialism (as separate and distinct from non-materialism) in evolutionary theory to the exclusion of the possibility of addressing meaning and purpose within the natural world. On this point, there seems to be an agreement.

In some ways, the clash between these two positions as represented by ID proponents and mainstream scientists recalls the methodological debate from the Darwinian-era critiques. At that time, the debate was between whether or not proper scientific method started from a single premise and moved outward to gather information that would either prove or disprove the premise, or whether one gathered information first and then moved inward to an overarching theory or premise. Regardless of the approach, the objective was the same: get to the facts of the matter. In other words, certainty was the epistemological target. The difference this time is that, though it will take some unpacking to see, mainstream science seeks contingent certainty, whereas ID advocates seek absolute certainty. Or, in other words, certainty versus Certainty. Contingent certainty, in theory at least, is open to challenge by new information.

The plaintiffs in the Dover trial argued that science, though not perfect, is an open and transparent enterprise, but the defendants do not accept this characterization. Implied in their testimony is a mistrust of the scientific community. ID advocates, such as Phillip

Johnson (2001), for example, claim that science operates according to social constraints in the forms of privilege, inclusion, and exclusion. As such, science furnishes a formidable knowledge-power relationship and so it is mistrusted by those excluded from its domain.

ID advocates portray a deep mistrust of the mainstream scientific community. For example, in his testimony, Michel Behe argued that the human immune system is an irreducibly complex system that has not been, and cannot be, adequately explained by evolutionary theory. To rebut this claim, on cross examination Behe was presented with an actual stack of more than fifty books and peer-reviewed publications offering a plethora of explanations, but he dismissed the body of evidence in its entirety by stating that "the scientific literature has no detailed testable answer to the question of how the immune system could have arisen by random mutation and natural selection" (*Kitzmiller v. Dover* Oct. 19, 2005, 21, 12-15). Such an obstinate attitude, one may surmise, is but a blatant display of daftness, blindness, and/or deceit, but these conclusions for the purposes here are hardly satisfactory.

Behe is well educated and articulate, and what seems most apparent is that Behe does not trust the evidence before him. Behe argued that "often times people when they're working under the aegis of a theory simply assume some component of it (Oct. 15, 2005, 21:14-16). Behe is explicit that he does not work from a Darwinian framework and does not see the evidence in the same way as those who do. In reference specifically to the human immune system, he said: "I do not see any evidence for the occurrence of random mutation and natural selection" (21-22:23-1). Behe is apparently skeptical of the scientific context or community in which the entire mass of evidence was produced

because from his perspective proving an evolutionary hypothesis involves assuming it first. Furthermore, Behe seems to imply that the social constructedness of evolutionary science renders it invalid.

Integral to the scientific enterprise and highly touted in this case is the process of peer-review. According to the plaintiffs in the Dover case, peer-review is the process by which empirical evidence is translated into a universal language or forum. It is a process whereby knowledge practitioners set in motion a system of checks and balances to validate or disqualify scientific knowledge claims. Miller states that he thinks that "science might be the closest thing we have on the planet to a universal culture" (Sept. 26, 2005, 63:3-5), and that "the peer review process is the essence of the scientific process" (39:23-4). This process heightens scientific credibility because it bears witness to the integrity of the knowledge claim and the claimant by extension.

There is perhaps some room for a healthy degree of mistrust of the peer-review process, though not likely to the extent that seems apparent from Behe's testimony. Each of the expert witnesses for the plaintiffs refers to the peer-review process as the sacred gatekeeper of the enterprise. It is through the peer-review process that knowledge claims are vetted—judged and revised. This indeed may be true, but as Steve Fuller points out for the defendants, those who participate in this process are relatively few in number. According to Fuller and often repeated in other academic contexts, very few scientists ever participate in the peer-review process: a common statement is that eighty percent of scientific publications are produced by only twenty percent of scientists. Perhaps this statistic simply indicates that some scientists are prolific and most are not, but some critics of the peer-review process would lend support to Fuller that bias in the review

process rather than the individual strength of the knowledge claim influences which authors get published and which do not.

Peer-review bias can indeed limit participation in the scientific enterprise. This bias has been rather convincingly shown to be particularly potent against women, authors from smaller institutions, and in cases where reviewers abuse the process by exercising overt political agendas (Smith 2006, 180). ID advocate Casey Luskin (2006) suggests the peer-review process is deeply flawed, and drawing conclusions from monumental scientific writings that were either rejected in the peer-review process or never entered the process at all, he suggests that peer-review is not necessary for good science. The objective here is not to evaluate the peer-review process. Rather, it is to show that ID proponents take up critiques from a wider dialogue where such critiques are leveled and accepted as valid, at least to some extent.

There are several 'take-home' points from this section. First, ID advocates critique science utilizing thoughts and ideas presented in a broader conversation about how science proceeds. Second, in this process, ID discourse, aided and abetted by traditional conceptualizations of science (such as produced by Miller), constructs a scientific "Other" from which they dissent. [61] Third, it is important to be able to identify the elements of critique because although they are constructed from a reasonable critique of science in the academic domain of science and technology studies, they are often tightly packaged together with ID's alternative. Of course, challenging science does not automatically validate religious belief.

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[61] I have adopted this conceptualization of the scientific "Other" from Hersh (2010). Hersh (2010) explores the ways in which one particular evangelical group in the US appeals to scientific authority.

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4.4.3 Implications

By constructing a scientific Other through a critique of traditional definitions and boundaries of science, ID proponents are able to demarcate a "good" and "bad" science of sorts. This separation allows ID advocates to simultaneously criticize and utilize science and scientific authority. In this way, what first appears to be contradictory, within the framework of ID critique is actually quite coherent. ID discourse condemns specific scientific orientations of which they claim to be significantly differentiated. This differentiation crucially rests on the reliable presence of a scientific strawperson—the Other—and it keeps the idealization of science in view as a constant referent against which ID advocates can tether their distinction.

Construction of the Other coincides with a conceptual framework of warfare which allows purchase on a potentially very persuasive tactic. In this context, ID proponents often claim that they are attacked and bullied by the scientific community. The following passages exemplify some oft-repeated tropes that characterize how the proponents of ID position their view against the scientific mainstream:

> For the past decade, we have had the scientific proponents of "intelligent design" sometimes frontally challenging and at other times offering significant modifications of the theory of evolution. The defenders of evolutionary orthodoxy raise the alarm at any suggestion of intelligent design or purpose, thereby implicitly endorsing a narrowly dogmatic version of evolutionary theory. (Neuhaus 2005, np)

In this passage, the "defenders of the evolutionary orthodoxy" paints a picture of troops guarding a religious stronghold. Not only does it appear that they are warding off

potential external threats, but describing evolution as dogma makes it appear that the guards are actively maintaining an internal organization. The ideas of orthodoxy and dogma are part of a common move within this discourse to describe evolutionists as religious extremists protecting their Truth and projecting it on the rest of the world. With this trope ID advocates accuse mainstream science of being committed to the doctrine of Truth above all else, and willing to trample anyone or anything that might stand in its way. Another example:

> There are other theories supported by very reputable scientists, including theories of evolution other than the established version to which students are now bullied into giving their assent. (Neuhaus 2005, np)

The trope of ID proponents being bullied by Big Science is abundant in this discourse. In this passage, the Neuhaus widens the accusation to include the victimization of students, presumably younger, more impressionable, and more vulnerable than ID proponents. By encompassing a perceived weaker element into the image of who mainstream scientists are attacking, claims of oppression are strengthened and sympathy is deepened. Another example:

> In educated circles Darwinism and other mechanistic accounts of evolution are utterly status quo. That has advantages and disadvantages for proponents like yourselves. On the one hand, it means that the full resources of the scientific and educational establishment are behind you, and you can use them to squelch dissent. (Dembski 2002, np)[62]

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[62] The full article can be found here: http://www.discovery.org/a/1185. Last accessed July 1, 2014.

In this passage, the trope of war is again rehearsed and embellished. Here the scientific and educational establishment are dictators who tightly control the domain of knowledge for the explicit purpose of exercising dominion over others and securing the benefits of being situated at the top of the hierarchy. One more example:

> The real "war" is the assault on the academic freedom and the very careers of scientists and other academics who investigate, discuss, or merely support intelligent design. While intelligent design may be a persecuted minority viewpoint within the scientific community, it is nonetheless receiving increasing levels of scientific support and its proponents continue to publish their research in scientific publications which develop and extend the theory. (Luskin 2006, np)

In this passage, war is the explicit framework in which the power relations between ID proponents and the rest of the scientific community are constructed. This metaphorical construction allows ID advocates to garner sympathetic support from its audience which tends, no doubt, to make the audience more receptive to their position. It constructs the Other as not only an opponent, but a Goliath opponent threatening to trample the ID little guy. Moreover, ID advocates extend this framework to the domain of freedom (academic), inviting the audience to view the threat of the Other as a threat not only to ID proponents but to the audience as well. This maneuver constitutes a defense tactic to the extent that it deflects intellectual engagement to an emotional reaction.

This type of move is enabled by a key element of a defensive ID strategy. ID advocates generally have two modes of communication: technical and non-technical. The more technical media tends to avoid explicit religious references, but such is not the case in more casual forums aimed at their followers. For example, in *The Design Inference*

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(1998), published by Cambridge Press, a renowned academic publisher, Dembski is very

clear that his objective is merely to establish a reliable method for detecting design, and

that this is entirely different from speculating on the identity of the designing agent. He

writes:

> We can determine whether an event conforms to a
> pattern without having to explain why the
> conformity exists. Thus, even though in practice
> inferring design is the first step in identifying an
> intelligent agent, taken by itself design does not
> require that such an agent be posited. The notion of
> design that emerges from the design inference must
> not be confused with intelligent agency. Though
> they operate in tandem, the two are separate
> notions. (227)

By demarcating the two—the design and the designer—Dembski is able to produce a

mathematical argument based on probability that seems to conform to traditional

academic norms. In a later publication entitled *Mere Creation*: *Science, Faith, and

Intelligent Design* (1998), published by InterVarsity Press, a renowned evangelical

Christian publisher, Dembski writes that "nature is not self-sufficient, God created nature

as well as any laws by which nature operates. Not only has God created the world, but

also God upholds the world moment by moment" (1998b, 14).[63] There is no demarcation

here between the creator and the creation.

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[63] On their website in the "About Us" section, InterVarsity Press writes that "Our Purpose: As an extension of InterVarsity Christian Fellowship/USA, InterVarsity Press serves those in the university, the church and the world by publishing resources that equip and encourage people to follow Jesus as Savior and Lord in all of Life." See the full page at http://www.ivpress.com/about/. Last accessed June 28, 2014.

The dual-track media of ID has several important functions. The technical publications have not been well received within academic circles which for the most part consist of the people with the expertise necessary for making a comprehensive assessment. Yet, these types of publications continue to appear even though they are often too technical for many laypersons. Most recently, Stephen Meyer published *Darwin's Doubt* (2013) with much fanfare in the ID cybersphere. The point that I am making is that splitting the media allows for the leveraging of (symbolic) scientific authority while thwarting critical engagement by the general audience (I take this issue up in more detail in Section 5.3). In the following chapter, I explore the Christianity aspect of ID in greater detail and this audience split will become even more prominent.

4.5 Conclusion

In this chapter, I have fleshed out the role of science in the ID debate. I have suggested that science is a source of concepts and ideas that ID advocates draw on to undermine evolution and promote ID. ID tenets recycle Darwinian-era critiques, but they largely ignore the world of biology and the responses to their claims. In this way an impasse is constructed between the ID perspective and mainstream science. This impasse is leveraged, however, in the construction of the scientific Other that ID advocates claim to be harassed by and subjugated to. This move utilizes science as a defensive strategy because it garners sympathy for the apparent underdog and deflects attention away from in-depth considerations of their own positions.

In this chapter I have also attempted to show that science is utilized as a source of authority in that ID advocates emphasize academic credentials and affiliations, utilize

technical language and other intellectual forums, and by establishing an alternative ID network that mimics mainstream academic communities. The formation of an alternative network exaggerates the apparent gulf between ID and mainstream science. In this way, it appears that not only is there an impasse between the two, but the two are in clear opposition and distanced such that bridging the two sides is not even a viable ambition.

I have suggested that science is utilized as a defensive element in that ID advocates critique the traditional definition of science, thereby creating a scientific Other from which they can differentiate themselves and position themselves as being oppressed. The construction of the Other is important for several reasons. It allows for the cultivation of audience sympathies that dampens rational critique, and it allows ID advocates to produce two distinct forms of media, which in turn allows the packaging of ID as common sense to their sympathetic audience. [64]

This chapter shows the oppositional construction of this discourse. This is a significant element of this discourse, because it is this oppositional structure that ID advocates rely on to build and leverage their epistemic claims that are then harnessed to explain and justify their position on other social and political issues. The following chapter expounds on the crucial nature of this oppositional structure for mobilizing social action in accordance to ID objectives. These objectives are clearly Christian, evangelical, ambitious, and very much concerned with gender and sexuality.

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[64] It could be argued that there is an inherent problematic symmetry in my argument. It may be the case that Darwinists also constructs a "non-"scientific "Other" (ID), but it is not symmetrical to my argument because the "Other" that ID creates is a fictional character detached from the broader commonly understood domain of science. Likely scientists do something similar, but this would be another incident of the same practice, not the other side of the coin, so to speak. Constructing a symmetrical image between science and ID is precisely what ID advocates seek and precisely what I identify as a mirage because it is an only an empty image of science that they employ.

CHAPTER 5 THE ID FRAMEWORK

5.1 Introduction

Thus far I have examined the role of science in the context of ID, and in the previous chapter, I suggested that the appearance of science in ID discourse provides several important political tools. As discussed in Chapter Three, ID is not really about science in terms of seeking new knowledge even though ID appears to transact in knowledge claims. So, if indeed ID is not about science, then the question arises as to what it is all about.

To this end, this chapter seeks passage beyond the scientific veneer of ID to its Christian roots and epistemic orientation. This chapter has two main objectives: to show how ID manufactures a collective perspective, and to show that this perspective is clearly Christian. These objectives are not separate and distinct issues, and indeed I address them together. This work is necessary because it is this framework that grounds the sexual politics in ID discourse which is the focus of the next chapter.

To achieve the objectives of this chapter, I will need to employ strategic interdisciplinarity explicitly and extensively. Recall from Chapter Two that strategic interdisciplinarity conceives of both the object of inquiry and the process of inquiry as a complex adaptive system in which I interact with a variety of texts and academic lenses to allow for the emergence of new insights and perspectives. The product that emerges can be understood as a representation or model of the strange attractor, and the strange attractor can be understood as a representation of the relationships exposed by the underlying question or questions. I will briefly unpack how these concepts will play out in this chapter.

As I began "wandering" through ID, the question of whether ID is or is not science directed my attention to how knowledge claims were being utilized. In other words, I began to wonder about the intended audience of ID material: who would be interested in this topic and why? Academic audiences have clearly not been receptive to this work, as we can recall, and the mainstream scientific community does not accept ID claims as tenable and/or science at all. It does not make much sense then to continually produce a high volume of material, books, videos, and the like, for a non-receptive audience. Yet, ID material is abundant. Furthermore, the power and politics of higher education notwithstanding, academia generally boasts a plethora of proficient knowledge practitioners and thus seems that it should be a valuable knowledge venue and therefore *the* place to vet knowledge claims. In other words, it seems that ID material is not really intended for the audience that is likely to have the epistemic tools to effectively engage with these claims. So if indeed ID is not about science *and* not even really intended for academic audiences, what does one make of the knowledge claims that ID advocates proffer? This is the overarching question of this chapter.

In one way, ID knowledge claims differentiate ID from knowledge sources, thus ID "knowledge" might helpfully, in some ways, be understood as claims of ignorance. This distinction is reflected in the impasse between ID and mainstream science, and it allows for the construction of the scientific Other as discussed in the previous chapter. We have also seen how science, in the context of ID, is used as a source of ways to attack evolution, as a way to garner epistemic authority, and as a defense strategy. Taken together, science is utilized as a political tool, but the science in ID is symbolic in that it provides a reference to scientific knowledge though it is separated from it. In this

discourse, knowledge claims are politically constructive and epistemologically reductive. It is therefore necessary to examine the power dynamics of both knowledge and ignorance.

In this chapter I draw on the concept of "epistemologies of ignorance" as introduced by Charles Mills in *The Racial Contract* (1997) and taken up in feminist scholarship. This work examines the ways in which knowledge is negatively utilized—blocked and constrained in ways that are amenable to creating and managing power and privilege of dominant groups. In this context, ignorance can be thought of as a set of active and constructive practices that imbue cognitive norms, often unconsciously, in a conceptual consensus that structures power relationships. Section 5.2 will expand on this framework a bit more and will lay the groundwork necessary for each of the subsequent sections. Through the lens of epistemologies of ignorance, it becomes possible to see how ignorance is employed to create, structure, and populate an epistemic space, or a space with a common vantage point and conceptual framework.

While an epistemologies of ignorance framework will be beneficial for seeing how ignorance can be productive in shaping a collective perspective, it is not sufficient for examining the knowledge claims that are made. In other words, I want to look at both the ignorance and knowledge that ID proffers. This is to suggest that although ID knowledge claims do not offer scientific insight, they are productive in other ways.

ID proponents assert that ID is not a religious doctrine, but this is widely contested. ID critics, such as Barbara Forrest (2001), for example, point to the circumstantial evidence of its development from creation science funding sources (from partnerships with large evangelical organizations and from renowned evangelical private

donors) and the religious orientations of its key advocates to connect ID to evangelical Christianity. I have shown in Chapter Three that ID developed from an earlier antievolutionist movement that was an intricate part of Christian Fundamentalism throughout the majority of the 20th century. Taken together, it seems that a religious studies lens would be helpful for examining ID knowledge claims.

Another element of strategic interdisciplinarity in this chapter is thus the uptake of a religious studies perspective, which I will use to show that ID involves a Christian framework in a much stronger but more subtle way than its creation science forerunners. More specifically, a religious studies perspective will be used as a lens for examining two key tenets of ID: irreducible and specified complexity. A close look at the content of these claims through this lens will enable me to show how ID, the concept of ID, is best understood as something akin to an element of a sacred doctrine, or more simply, a "thing" deemed special, and I will be able to comment on the mechanics of religion that are apparent in this discourse.

The scavenger nature of strategic interdisciplinarity is vivid in this chapter. I am interested in the knowledge claims that ID proponents make, what they might mean and how they seem to work, and so I glean from a variety of sources and employ a wide range of ID material. For example, I utilize ID videos, online articles, blogs, and books. This process facilitates the analysis that will enable me to show more explicitly the ways in which the antievolutionist tools are put to use. I will spend quite some time wandering and interacting with a variety of texts in this chapter, as I am motivated by an interest is the epistemological landscape of ID. I will engage with the texts in a dynamic, non-linear

way, and the result, this chapter, is the emergent properties of these interactions. This is strategic interdisciplinarity in process.

5.1.2 Chapter Overview

This chapter unfolds in a rather non-linear way and so I am including a basic overview of each section as a guide through the assertions that I make. In Section 5.2 a general overview of the epistemologies of ignorance framework is provided. This overview will cover key terms and concepts in the literature and will highlight those elements that are particularly relevant to this project.

In Section 5.3 I aim to show two things: 1) that ID works to create an epistemic space—a gathering ground, so to speak, and 2) that this space is decidedly Christian. In examining the epistemological framework in this section, we will see that the impasse created between ID and mainstream science, as was shown in the previous chapter, is not just an unfortunate disagreement between two perspectives. Rather, we will see that this impasse is a crucial structuring element of the ID discourse. By being positioned in opposition to evolution, ID forces its audience to "choose" one side or the other by offering only two conceptual options, and each precludes the other. Furthermore, ID discourse employs informational ignorance (to be explained in Section 5.2) as a key epistemologies of ignorance practice that attempts to weight the choice in their favor by blocking and veiling expert knowledge. I will show that the knowledge claims that they offer as an alternative to evolutionary theory are Christian creation stories translated into technical scientific language. They are, what I call, scientized.[65]

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[65] I am using the term "scientized" to mean the presentation of creationist ideas in sophisticated technical scientific formats and language.

Section 5.4 builds on the assertion that ID is a scientized Christian narrative as explained in the previous section. The aim of this section is to show how ID functions in ways similar to many other religions in regards to furnishing a subgroup within that religion epistemic advantage and authority that then gets leveraged to describe both how the world is and ought to be. More specifically, I will suggest that ID is a "thing" deemed special or a type of politically advantageous mystery. I will show how an epistemology of ignorance is employed in the construction of systemic ignorance (explained in Section 5.2) by substituting mystery-as-knowledge for knowledge to hierarchically structure the epistemic space. Deeming something special is often accomplished by enacting taboos and prohibitions against combining or comparing the special thing to other similar but conventional things. In this section, the significance of the scientific Other (see 4.4) will become clear: the specialness, or sacredness of a sort, of ID is created in the taboos and prohibitions attributed to evolution. If we think of ID as a mystery, as something special, it is reasonable to assume that it would lose this status in light of evolutionary explanations (even theistic ones, as the taboo of evolution would be diminished and the its potency of ID reduced). The political relationships that stem from the epistemic advantage and authority garnered by the proffering of mystery, of course, are jeopardized by demystification.

By Section 5.5, I will have suggested that the dualistic nature of ID creates an epistemic space, a collective of sorts, in that it flags the group of all those who subscribe to this view, and that this space is Christian. Then, after showing the religious mechanics of ID, I will have argued that like most religions, ID imbues its proponents with epistemic advantage and authority, and as such, it hierarchically structures the epistemic

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space it created.[66] The aim of this section is to show how this authority works, or how this spaced is populated, so to speak. In other words, after much travel, in this section I will finally arrive at the point where I can lay bare my guiding question of this chapter: what is one to make of the knowledge claims of ID?

Here I will show that ID puts the antievolution methodology to work in the construction of collective ignorance by drawing on one of its key elements: the use of symbolic science. ID discourse employs the construction of the scientific Other to create emotional and cognitive confusion that is used as a defense strategy to garner sympathy and deflect rational engagement. ID discourse also draws from the repository of evolutionary critiques to exploit the doctrine of certainty. Evolutionary theory is just guesswork, ID advocates claim, and posits a tyranny of undirected natural forces, whereas ID is the instantiation of meaning and purpose, a guided trajectory, in the natural world. ID is therefore presented as a much safer option. This narrative is likely attractive to many when the perils of uncertainty and the unknown are accentuated in the science pageantry of ID discourse. With these tools ID instantiates collective ignorance in that it encourages its audience, those likely already sympathetic to Christian ideals, to become or remain signatories to a numinous contract, to not know, to accept the mystery-as-knowledge as knowledge itself. By the end of this chapter, we will be ready to engage explicitly with the sexual politics within this discourse.

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[66] By epistemic authority, I mean to suggest that ID licenses its proponents to impart knowledge of the world, or to state how the world is. This authority becomes significant in the discussion of sexual politics in the Chapter Six as this license is extended to posit normative social-organizing practices.

5.2 Epistemologies of Ignorance

In this chapter I draw on the concept of "epistemologies of ignorance" as introduced by Charles Mills in *The Racial Contract* (1997) and taken up in feminist scholarship. This work examines how ignorance is used in substantive ways to construct and maintain dominance and privilege. In this context, ignorance can be thought of as active and progressive practices that imbue cognitive norms, or ways of seeing things in a taken-for-granted way that, often unconsciously, works to create a conceptual consensus that structures power relationships.

Epistemologies of ignorance provide a helpful framework for thinking about the dynamics of epistemic authority—who gets to say how the world is, who gets to say how the world ought to be, and what groups benefit or suffer from these decisions. In the context of racism, Mills argues that white supremacy is the ubiquitous structuring backdrop of Western political philosophy which has been maintained and reproduced through active and productive practices of ignorance. These practices include exclusion, marginalization and concealing of knowledges that do not emerge from and/or fit into the white standard, or cognitive norms (1997, 93). The regulating of knowledge by those in power is paradigmatic of systems of oppression and domination.

Systems of oppression and domination largely rely on a form of conceptual consensus. In the case of racism, Mills argues that Western philosophical and political thought is predicated on a perceptual consensus of white supremacy that accommodates a delusional bifurcation of the world into white and non-white. Under the banner "white" belong all things good, true, pure, holy, sacred, normal, standard, and civilized. Mills (1997) writes:

The requirements of "objective" cognition, factual and moral, in a racial polity are in a sense more demanding in that officially sanctioned reality is divergent from actual reality. So here, it could be said, one has an agreement to *mis*interpret the world. One has to learn to see the world wrongly, but with the assurance that this set of mistaken perceptions will be validated by white epistemic authority, whether religious or secular. *Thus in effect, on matters related to race, the Racial Contract prescribes for its signatories an inverted epistemology, an epistemology of ignorance, a particular pattern of localized and global cognitive dysfunctions (which are psychologically and socially functional), producing the ironic outcome that whites will in general be unable to understand the world they themselves have made.* (18, emphasis in original)

In this framework, "objectivity" speaks less about the way the world is and more about who has the resources to make so called objective claims in the first place. Furthermore, in this framework, knowledge is power and ignorance is privilege. An epistemology of ignorance often involves the projecting of simplistic hierarchical value dualisms onto a complex world. In terms of racism, it is not just the idea that the world is neatly divided into only white and non-white, but this dualism is hierarchically ordered such that white occupies the upper more valuable position and non-white is relegated to a lower denigrated space.[67]

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[67] For the purposes of this chapter, the concept of value dualism is a significant element because, as will be the focus of Section 5.3, ID constructs a value dualism between evolution and ID with ID being granted the only choice of value. I have included this statement in a footnote rather than the body of the chapter because although it is important, I am hesitant to place the power dynamics of ID on par with racism in the main text. I cannot within the confines of this project assess the ways in which they are similar or different, though there is a good argument to be made that ID is part of the epistemologies of ignorance identified by Mills in the construction, reproduction and maintenance of racism. From what I can see, however, I cannot endorse the suggestion that they are similar in any practical or lived way. All I am suggesting is that are conceptual similarities.

Linda Alcoff (2007) argues that from a social perspective epistemology is not merely an investigation of how knowledge is produced. Examining the ways knowledge is produced necessarily, perhaps more significantly even, involves examining the ways in which certain types of knowledge are ignored. Ignorance is conceived as more than just a gap in knowledge or as some yet to be discovered truth about the world (Sullivan and Tuana 2007, 1). It is a cognitive practice that ascribes value and non-value to different knowledge claims and knowledge practices and thus ascribes value and non-value to different social groups. Within this framework, specific episodes of ignorance are enacted via webs of trust, doubt, epistemic authority, silencing, memory manipulation, and conceptual confusion (Tuana 2004). Epistemologies of ignorance are active when knowledge is destabilized in some way for the purpose or interest of benefiting, sustaining, and/or reproducing dominance and privilege.[68] Ignorance constitutes an essential tool for the construction and maintenance of social power dynamics.

Ignorance is not just a perceptual malpractice but is constituted by various positive and reinforcing activities. These activities might include marginalization, exclusion, unlearning, hiding, and forgetting. In a simple but prevalent example, a recent television news story told of the arrest of a young person in relation to some form of physical altercation, but the person could not be identified because of age. As the reporter was speaking, however, the camera panned from a blurry image of a person entering a courtroom to a clearly focused image of the person's hands. It seemed at first like a silly transition and made little sense unless one recognized that the camera work functioned

[68] By "destabilized" I mean to suggest a point at which knowledge claims are called into question, or rendered uncertain or construed as dangerous. These types of claims evoke skepticism of the knowledge claim to which they refer.

precisely to identify the color of the person's skin. For many in the Western culture, people are racially visible in that certain stereotypes are evoked through the repeated association of certain types of people with certain types of behaviors. This practice hides the fact that people are diverse, and the careful deployment of stereotype constitutes a type of marginalization by positing that all people of the same "race" will behave the same—in this case, as criminals. For white people, who still often occupy the upper echelons of societies, keeping these stereotypes intact is important because otherwise their position of power becomes obvious and threatened. It is in the best interest of white people to not know the whole story, and to be oblivious to social inequalities that result from where one's attention is focused.

Linda Alcoff (2007) provides a useful taxonomy of ignorance that I will refer to as a guide through this topic. Alcoff describes three types of ignorance that can be seen as constitutive elements of epistemologies of ignorance. The first entails a lack of information about a given knowledge domain even if such knowledge is available. This type of ignorance is closely tied to the situatedness of the knower—not all perspectives garner the same view, a layperson in a cockpit is ignorant of flying a plane vis-à-vis the pilot, for example. Epistemic equivalency is contingent on subject position within the epistemic terrain (41). I will use the term "informational ignorance" to refer to this form in later sections. In this chapter, I will discuss how this type of ignorance is employed in the veiling of expert knowledge by the construction of the scientific Other.

A second type of ignorance Alcoff identifies is produced in conjunction with social identity. One's group identity or affiliation entails a foundation of beliefs and belief systems that impact the acceptance or rejection of knowledge claims. Ignorance in this case

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stems not so much from the status of empirical evidence as it does from the management of knowledge in order to procure cohesion with starting belief sets (45). I will use the term "collective ignorance" to refer to this type of ignorance. In this chapter, we will see how ID proponents exploit the doctrine of certainty to encourage their audience to become or remain supportive of their perspective. In this way they manufacture collective ignorance to reproduce and reinforce beliefs about the status of evolution and ID.

The third type of ignorance that Alcoff elucidates derives from the structurally inculcated epistemological practices of the dominant group in dominant/oppressive systems. Dominant groups cultivate beliefs and perceptions that engender both an active seeking of knowledge claims that protect and enhance the position of power and foster a positive interest in ignoring and/or discrediting knowledge claims that threaten a disruption in the balance of power within the status quo. In this case, ignorance is embodied in the cognitive norms that shape perception in the interest of the dominant group (47). I will refer to this type of ignorance as "systemic ignorance." In this chapter we will see how systemic ignorance is enacted by the substitution of mystery for knowledge as a means constructing epistemic advantage and authority that is safeguarded by attacking and discrediting evolution.

These three types of ignorance are by no means discrete, and all three will be brought to bear on the case of ID. There are likely other types of ignorance in this discourse that warrant comment, but it would be quite impossible to identify all the practices of ignorance that may be present. The taxonomy above, however, provides sufficient scope to meet the objectives of the chapter.

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The application of the epistemologies of ignorance lens to the issue of ID involves bit of a departure from the epistemologies of ignorance literature generally speaking. Typically, the lens of epistemologies of ignorance reveals dominant-oppressive relationships, and typically, there is a goal of addressing and/or ameliorating such situations. Usually, in the cases discussed in this literature, the dominant group orchestrates ignorance in the interest of maintaining social power, and those excluded from the circle of power seek to change this situation, or at least develop tools for navigating around it. In the case of ID, however, the dominant group, ID advocates, claim a position as oppressed while exercising a degree of dominance over seemingly willing participants, their audience, in the hierarchical system. There is no identifiable ambitions for change, at least there are none that are obvious from the discourse itself. Identifying who are the oppressed and who are the dominant is a fuzzy undertaking, until the lens is opened wide enough to encompass the issues of gender and sexuality. Even this is a tricky proposition as one runs the risk of imposing dominant-oppressive categories rather than exposing problematic power-relationships. What this lens can do, in this project, is bring to light the political/religious mechanics of ID discourse. I will (mostly) leave the ascription of the dominator(s) and oppressed out of the explicit conversation.

5.2 ID and The Bible—Creating an Epistemic Space

Arguments from design have long been associated with Christianity, and ID is no different in this regard. In this section, I endeavor to show that ID advocates employ epistemologies of ignorance to place ID in opposition to evolution thus creating an epistemic space by compelling its audience to "choose" one side or the other.

Informational ignorance practices, however, weight the choice in favor of ID. Furthermore, the epistemic space that is created is decidedly Christian. To show this I will first explore the ways knowledge is utilized in this discourse and then revisit key ID tenets. My aim in revisiting ID tenets is to show that ID involves two scientized creation stories: the Genesis account and the Logos account found in the prologue of John's Gospel. These stories form the pillars of the Christian faith as one refers to the creation of the material world and the other refers to the creation of the spiritual world on Earth and the Christian believer by extension. Understanding the Christian orientation, particularly the biblical roots of ID, will provide insight into the framework in which gender and sexuality is situated in this discourse, and it will provide a view into the mechanics of collective dynamics in which such ideas of gender and sexuality can be instantiated into the public domain.

5.2.1 ID and an Informational Ignorance

ID does a great deal of epistemological work in shaping a collective perspective. One of its key functions is to divide the conceptual landscape into two opposing views thus creating a dualistic conceptual framework that is maintained by practices of informational ignorance. The constructed dualism forces the audience to choose between opposing perspectives and enacts a cohesive collective to the extent that all those who accept the ID tenets are conceptually located in one epistemic space. Practices of ignorance, such as the veiling of expert knowledge, weights the choice in favor of ID. Let me explain.

The dualistic structuring of the ID epistemic space is created by erecting and highlighting a sharp distinction between natural causes and intelligence. In the ID

documentary *Unlocking the Mystery of Life* (Allen and Eaton 2003), Stephen Meyer

positions ID in opposition to evolution through the definition of "methodological

naturalism." He says: "it just means that if you're going to be scientific, you must limit

yourself to explanations that invoke only natural causes. You can't invoke intelligence as a

cause" (52:00). Meyer reinforces and elaborates this distinction: "We know, at present,

there is no materialistic explanation, no natural cause that produces information. Not

natural selection, not self-organizational processes, not pure chance. But we do know of a

cause that is capable of producing information and that is intelligence" (1:00:29). In this

statement, Meyer rules out the possibility of intelligence being a natural cause—natural

causes are not known to produce information and intelligent causes are known to produce

information. To the extent that ID advocates delineate intelligence and natural causes they

position ID counter to evolution and block information from inhospitable epistemic

locations. They conceptually (by definition) designate those places, such as those

represented by Darwinists (a term that is used frequently in ID material) as off limits. By

constructing this dualism, ID advocates create the condition such that one must choose

between natural causes and intelligence, or natural and supernatural, or mind or matter

(depending on how one looks at it).[69] In this way, ID advocates force the epistemic hand by

eliminating the logical possibility of holding both perspectives and precluding alternative

options such as intelligence being an emergent property of matter.

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[69] There is an interesting implication of this definition: it is not clear if human beings should be understood
to be natural or supernatural inasmuch as they/we (arguably) are intelligent or have intelligence. At the
heart of this dualism is the notion of the body and soul distinction familiar in most mainstream religions.
This dualism posits that the body is natural, but the soul (read: spirit, mind, or intellect) is something else.

Informational ignorance is employed in this space to weight the choice in favor of ID. This type of ignorance recalls what Linda Alcoff (2007) explains as a form of ignorance that can be identified in epistemic inequities between knowers from different epistemic locations when one knower lacks knowledge vis-à-vis another (43). Within ID discourse, informational ignorance is of this sort in that it employs various devices to block access to and discredit knowledge that is otherwise available.

Informational ignorance is created, in one way, in the dualistic structure of ID. This structure exploits the differing epistemic locations in that it veils the entire realm of evolutionary science by binding it into a single oppositional unified Other. Ironically, one of the ways in which this veil is instantiated is by flooding the audience with information. The ID documentaries *Unlocking the Mystery of Life* (Allen and Eaton 2003) and *The Privileged Planet* (Allen 2004) are good examples. The first deals with molecular biological structures, and the audience is repeatedly treated in immense detail to descriptions of the intricate structure and function of biological cells and living organisms. Colorful animations bring to life complex DNA structures and the informational blueprints they produce. Similarly in the *Privileged Planet,* the producers recite the mathematical complexities of Earth's unique place in the cosmos. Throughout both of these, the audience is never offered any discussion of the development of the cosmos and living organisms. They are offered only layer upon layer of description of how immensely complex things are. The extensive historical knowledge that has been assembled over time is veiled by the argument that things are so complex that they "obviously" could not have just happened on their own.

ID advocates often utilize an appeal to common sense as a means of imposing "objective" or "obviously true" knowledge claims as the ultimate measurement of truth, and this constitutes another practice of informational ignorance. In the film *Expelled: No Intelligence Allowed* (Frankowski 2008), for example, the filmmakers show clips of conversations with evolution experts and philosophers and follow these clips immediately with short slap-stick comedy clips or clips from famous vintage movies in order hyperbolize the expert's comments in a mocking fashion. At one point in the film, the narrator, Ben Stein, argues that evolution cannot explain the origin of life, though unlike in the previous films, he does, at least on the surface, seem to investigate various evolutionary theories. In this context he interviews a well-known evolutionary philosopher. He says: "Prominent Darwinist Michael Ruse attempted to explain one of them [origin theories] to me. (Pause, and then in a low slow drawn-out tone,) he wasn't kidding" (33:55). Stein asks Ruse: "How did we get from the inorganic world to the world of the cell" (34:12)? Ruse recounts one theory that suggests that life may have begun on the backs of crystals. Ruse's explanation is immediately followed by a vintage movie clip of a psychic reading a crystal ball in a high-pitched comedic voice. Stein repeats the question only this time accentuating the portrayal of a great divide between crystals and living organisms. He says: "but, but, but, at one point there was not a living thing then there was a living thing. How did that happen" (34:29)? Stein's repetition of the question is rhetorical in that it does not seek any additional information and it works to make the previous answer seem "obviously" absurd.

Expelled (2008) is produced in a style similar to other popular documentaries that appeared around the same time and deal with controversial issues, but this does not negate the epistemologies of ignorance at work in the film. One might argue that this documentary

style is a cheap way to prop up weak arguments and is more of a sign of poor debate rather than informational manipulation. This may indeed be true for all the practitioners of this documentary genre, but what is particularly interesting about *Expelled*, however, is that it severs the experts from their expertise and glorifies ignorance by equating knowledge with buffoonery. *Expelled* is in some ways an easy example because the appeal to common sense is quite obvious, but it is representative of ID media in general. In the ID movie *Unlocking the Mystery of Life* (Allens and Eaton 2003), for example, after showing a lengthy sequence of images of animals and organisms in increasingly rapid succession, culminating in a screenshot consisting of multiple frames of a variety of human faces, the speaker says: "All of us have a sense that if we let that evidence speak for itself, that it would lead us in a very different direction—away from natural selection and towards a different conclusion about the origin and nature of life on earth" (11:10). This scene is immediately followed by the reading of a quote from Darwin's *Origin* by a narrator in an exaggerated high-pitched seemingly mocking tone of voice. There is no presentation of any evolutionary evidence even for the sake of the debate. There is only an undermining of the theory and its articulator(s).

In these texts, ID advocates draw extensively on their defensive toolbox. In *Expelled,* the audience is repeatedly treated to images that characterize science as an oppressive bully. The scientific Other is constructed as the oppressor and ID the underdog, and in *Unlocking the Mystery*, the Other is denigrated and discredited in an appeal to common sense that paints mainstream science as an unworthy and untrue knowledge source.

For those who accept ID, common sense trumps expert knowledge. The concept of self-organized or emergent complexity embodied in the diversified elements of the living world may seem counterintuitive when compared to the sciences that have enabled the production of well-designed mechanisms and technologies. Indeed, ID proponents conflate self-sufficiency of nature with naturalism and identify naturalism as the primary enemy of ID (Dembski 1998b, 13-14). In this way, they deflect attention away from the empirical content of evolutionary theory and focus on the theoretical framework. At the level of theoretical frameworks, ID proponents can then suggest that the evolutionary worldview is the "real" problem. Subscribers to this perspective form a cohesive collective in as much as they all share a common foe—evolution—the symbol of their contrived epistemic location.

5.2.2 ID as Biblical Narrative

Stephen Meyer (2009) argues that ID is not a religious theory but is merely consistent with some religious beliefs, but this, I would argue, is an understatement. ID theory itself entails a Christian framework in a much stronger but more subtle way than its creation science forerunners. To make this argument, it is necessary to take a closer look at the key ID tenets: irreducible complexity and specified complexity. In the previous chapter, these two tenets were examined in relation to mainstream scientific views, and what we saw was that these tenets led to an impasse, a distinction from mainstream science. In this chapter, we will see that these tenets do quite the opposite when compared to biblical narratives.

Irreducible complexity is a theoretical proposal that challenges the evolutionary premise of speciation. As we have already seen (4.2), Behe (1996) argues that organic development cannot be accounted for by small gradual improvements over time because,

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before a living system is functioning properly, it would not be fit thus would not be favored by natural selection. The implication of Behe's argument is that the entire system must have come into being simultaneously as a single unit. He writes: "Natural selection can only choose systems that are already working. If a biological system cannot be produced gradually it would have to arise as an integrated unit, in one fell swoop, for natural selection to have anything to act on" (Behe 2001, 39). As such, a very narrow view of organic origins is espoused.

It seems to me that Behe's argument posits at least a quasi-literal reading of the Genesis narrative. There is a highly symbiotic relationship among living systems, among each other and between systems and their environments (non-living systems).[70] Living systems are not independent discrete units but are heavily reliant on each other within the web of life, so if individual organisms are irreducibly complex so too is the whole living world. Given that complex organisms cannot exist without other complex systems, then if one was intelligently designed at one time then all must have been designed at the same time. There is virtually no room for evolution at all, of any sort.

The mechanistic theory of irreducible complexity is highly reductionist because it is an all or nothing theory. In this account nothing happens on its own without all the pieces already strategically assembled. If irreducible complexity is true, then the origins of the cosmos must have indeed been very rapid: how long would humans survive without intestinal bacteria, or plants without pollinators, or any of the other highly interpenetrated beings and living things without each other? Utilizing irreducible

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[70] I am assuming here that there is a clear distinction to be made between living and non-living, though I am not committed to the idea that such a distinction is really possible. Minimally, I would argue that the distinction is fuzzy.

complexity to explain biological origins differs little from explaining biological origins as happening in six days, give or take.

The "one fell swoop" form of becoming is a reference to special creation—very similar to that of the Genesis creation story, though there seems to be a concerted effort in this discourse to deflect attention away from this point. It is quite important to note at this point that I am principally concerned with Behe's argument, as it does not seem that Behe himself is a Bible-believer on par with those within the evangelical realm (Lyons 2008). His work, however, constitutes a primary ID tenet. That Behe does not identify as a biblical literalist actually benefits the ID movement because his more seemingly secular orientation can be seen as giving weight to the claim that ID is not a religious theory. The definition of ID on the Discovery Institute website posits that ID is evident in "the geologically rapid origin of biological diversity in the fossil record during the Cambrian explosion approximately 530 million years ago."[71] The age of the Earth is a decoy here, however, because if natural selection is largely impotent, as Behe suggests, then the age of the Earth is largely irrelevant. It is irrelevant to the integrity of the argument for irreducible complexity, but it does, however, work nicely to flag a distinction from the "real" biblical literalists and creation scientists who generally assert that scientific evidence can only attest to approximately six thousand years of earth history—the approximate age of the biblical record (McKay undated).

On its own, the Genesis story of creation is only one element tying ID to a Christian framework, but taken together with Dembski's theory of specified complexity,

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[71] The full definition can be found on the Discovery Institute website: http://www.intelligentdesign.org/whatisid.php.

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ID can be seen as being decidedly Christian. Irreducible complexity espouses the Old Testament version of creation, but it must be understood in conjunction with specified complexity. Specified complexity references the creation story in the prologue of John's Gospel, which tells the story of the New Creation. This creation, however, is not biological but spiritual, and it is the doctrinal crux of Christianity. It is through this New Creation that the divine (God) is believed to transverse the natural/supernatural realms to enter the material world via the person of Jesus. "The Word became flesh" (John 1:14).

The New Testament creation story expands on the Genesis creation story by explaining God's method—he spoke the world into being. In other words, he transmitted information that transformed nothing into something. This divine methodology is often referred to as Logos theology.

Dembski explains specified complexity in terms of information theory by correlating the concept of "specificity" to "information" and the matrix of the parts, functions, and purposes to "complexity." Dembski's information theory uses language as a conceptual framework for understanding his thesis, which equates to a translation of Logos theology into a mathematical form (Dembski 1999a; Forrest and Gross 2004, 289). Indeed, Dembski (1999c) explicitly refers to his theory as the Logos theory of creation. Dembski (1998c) states that "the language that proceeds from God's mouth in the act of creation is not some linguistic convention. Rather, as John's Gospel informs us, it is the divine Logos, the Word that in Christ was made flesh, and through whom all things were created" (np).[72] In Genesis 1, God says "let there be light" and there was light. Everything God "said" came to be; it was his words that brought forth the power that animated the

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[72] This article can be found here: http://www.discovery.org/a/119. Last accessed July 1, 2014.

divine creation. It was instant and ahistorical. For Dembski, the act of speaking invokes a first cause, an intentional preconception of meaning that once imparted directs the material world in real physical ways.

Logos theology has a long and winding history in Christian doctrine, inherited from Platonist philosophy of forms in which the archetypes of all things exist in an abstract realm of perfection prior to their realization in material and variable form. The Christian version of this thesis, sometimes referred to as "Divine Ideas," suggests that "all things have a primordial existence as God knows and desires their eventual coming to be in time and space" (McIntosh 2012, 367). This thesis is particularly important to the Christian doctrine of creation because the coming to pass of the living world is thus understood as an expression of love from the mind of God (McIntosh 2012, 367). Furthermore, the incarnation of Christ is an expression of this Divine love in that he delivers a form of himself that is both spiritual and material, and is understood as the bridge, both literally and figuratively, between God and humanity (Boting 2006; Bostock 2007). It is this bridge that, according to Christian doctrine, brought the person of Christ into the world and provided salvation to a death-destined humanity.

The scientizing of Logos theology does some important epistemological work: it normalizes and idealizes the subjugation of the empirical to the spiritual. The Logos creation story of John's Gospel is not merely an expression of God's love, as the New Creation is said to enable direct access to the Divine. Prior to the incarnation of the Divine, access to the Mind of God was understood as coming from the examination of his creation, or the material world, and while this access is still part of Christian doctrinal basics, it is supplemented by a belief in direct access to the Mind of God through the New

Creation—the Holy Spirit in the believer made possible through the sacrificial deeds of Christ (Bostock 2007). The Logos—God's word—is thus understood as the transmission of information from the spiritual to the material realm and the spiritual conduit between God and man.[73] In other words, through the scientizing of the Logos theology, ID compels valuation of the inner world, understood to be the direct communion with God (in believers), over the material world with which one physically interacts. The language metaphor is very important as it establishes the priority of spoken word over the empirical realm of senses and experience. This valuation is central to the ID movement according to the Discovery Institute's website: "mind, not matter, is the source and crown of creation, the wellspring of human achievement."[74]

5.2.3 Section Summary

In this section I have attempted to show how ID creates an epistemic space that is best understood as a Christian space. The creation of the Christian space is accomplished by an epistemology of ignorance that requires substantial practices of ignorance. If, as ID proponents claim, evolution epitomizes scientific materialism, and given the overwhelming logic and evidence of evolutionary theory (despite debates about the details), then rescuing a designer perspective in the way ID proponents attempt requires a formidable effort. It entails a turning away from the scientific criteria of knowledge and much of the insights and evidence it has facilitated.

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[73] The use of the word "man" as referring to all of humanity is intentional. Although I do not make the argument here, the preeminence of man over women in this narrative is a familiar element.

[74] This quote can be found on the Discovery Institute's "About" webpage: http://www.discovery.org/about.php. Last accessed June 28, 2014.

This epistemological arrangement does some important work in terms of establishing a collective. For ID believers, irreducible complexity hedges and fortifies faith in the special creation—creation of the material world—and specified complexity hedges and fortifies faith in the New Creation—creation of the spiritual (inner, intellectual, cognitive, affective) world. There are strong parallels between the two stories: conceptual, structural, and textual (Coloe 2011). These parallels function to harness power and authority of the creation of the world to the creation of the Christian believer. ID does not simply fit with Christianity as some advocates suggest; rather, ID entails a decidedly Christian worldview. It conceptually demands a Christian worldview that adheres to a common sense interpretation of the Genesis narrative in conjunction with the "New Creation" narrative of John's Gospel.

In positioning ID in opposition to evolution ID proponents claim that this issue involves the competition of two parallel scientific movements; however, one, through various practices of ignorance, is dismissed, and the other, the one that conforms to Christian common sense, is the obvious rational choice. The collective that is drawn here consists of those who, based on biblical belief, stand in opposition to evolution.

5.3 Structuring the Epistemic Space

This section builds on claims of the previous section. Based on the understanding of ID theory itself as a Christian theory, and its lineage from Christian Fundamentalism, a religious studies lens should be helpful. The aim of this section is to show how ID functions in ways similar to many other religions in regards to furnishing a subgroup with epistemic advantage and authority that then gets leveraged to describe both how the

world is and ought to be. To show the religious function of ID will require a foray into some basic religious studies concepts.

In this section, we will see how systemic ignorance is utilized to build epistemic advantage and authority. We have seen how ID harnesses the authority of science (4.3), and how ID can be seen as a scientized creation narrative (5.2), but I want now to explore in greater detail its role in invoking religious authority.[75]

This section will proceed as follows: First, I will provide just enough background information on the study of religion in order make my case. I will then explain how ID can be understood as a religious concept. I will then explain the type of theology that this concept involves and show how it enacts epistemologies of ignorance by substituting mystery-as-knowledge for knowledge. Finally, I explain how this practice hierarchically structures the epistemic space by granting ID advocates both religious and epistemic advantage and authority. Later in this project, I will show how this advantage and authority gets leveraged to assert normative beliefs in regards to sexual politics.

5.3.1 ID as a "Thing" Deemed Special

I want to suggest that the concept of ID constitutes not only a biblical idea but a type of "special" idea that supports a sacred narrative. According to Emile Durkheim, religion is best defined by the "characteristics which are found wherever religion itself is found" (1915, 24). Though defining "religion" involves an entire body of literature in its own right, the element of importance here is the idea of "sacredness"—apart from

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[75] The term "religious" in this project is simply meant to refer to the rather nebulous constellation of Christian beliefs and their entailments (practices, doctrines, etcetera).

whether or not it can aptly be considered as "religious." Durkheim's concept of the "sacred" has been taken up, re-worked and expanded by scholars, but a general understanding of "sacred" as extra-ordinary, other than the profane, and safeguarded by taboos is a generally acceptable foundation of more nuanced and delineated understandings (Knott 2010). Quite apart from what religious participants may or may not say of their particular sacred thing, I side here with scholarship that convincingly asserts that sacredness is not an inherent property; rather, it is an ascribed status (Smith 2004; Taves 2009).[76]

A bit of terminology sorting is first necessary at this point. The term "sacred," is the focus of a methodological debate between religious studies scholars. There are those scholars who assert that the study of religion is a study of an intangible realm of experience and should thus be addressed differently than other academic topics. In other words, they argue that the study of religion must be approached differently from academic studies in general, but this is a concept that many other religious studies scholars reject (Smith 2004; Taves 2009; Knott 2010; McCutcheon 2012). To sidestep this debate, Ann Taves (2009, 602-604 KL) suggests the term "specialness" instead, as a generic reference for things like "sacred," "magical," "spiritual," and so forth, and she suggests that it is possible to consider such things in a broader context—particularly as such things develop in social contexts. "Things" can refer to thoughts, ideas, concepts,

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[76] Taves (2009) makes this claim by utilizing examples of the ways in which the ascription of sacredness to certain things (ideas, objects, people, and etcetera) changes over time—often things that were considered sacred are not now and vice versa.

people, emotions, and the like (Taves 2009; Knott 2010).[77] Taves draws on previous

theorists to use the term "singularization" to refer to the process of marking something as

special, and she suggests that things be considered on a continuum rather than exclusively

special or ordinary.

Drawing on an interdisciplinary roster of religious studies scholars, Taves (2009)

discusses some of the processes by which people "deem something special," as she puts it

(600 KL). For example, sometimes people transform things that seem to stand out or

"approach an ultimate horizon or limit" into an absolute ideal thus demarcating it from

common experience—human perception and imagination. Deeming something special

may result from an attempt to account for and accommodate anomalous experiences and

appease cognitive dissonance (812 KL). Often prohibitions or taboos are created to

demarcate something from the ordinary.

In a similar way, characteristics associated with anomalies can be solidified into

reality and deemed as special based on its association with the mystery. This process

seems to be deeply entrenched in collective action, and numerous scholars make

connections to its evolutionary history. Some scholars suggest that special things and the

processes of deeming them so are a product of human necessity to make sense of the

world, and/or to facilitate the basis for moral communities that in turn facilitate

evolutionarily necessary intuitions in regards to such things as harm and fairness, group

dynamic, social hierarchy, and so on (847 KL). Also, a correlation of awe-related

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[77] I defer to Taves (2009) in defining "things," as this understanding seems most applicable in the case of ID. She writes: "We can consider 'the sacred' as an emic term and refer simply to 'things set apart and forbidden,' where 'thing' can literally mean anything, whether event, person, behavior, object, experience, or emotion" (Taves 2009, 614 KL).

emotion evoked by experiences that cannot be readily accommodated to common experience sometimes a contributing factor (842 KL).

Based on these ideas, I want to suggest that ID, the concept of ID, be considered as a "thing" deemed special.[78] This suggestion builds on the assertion in the previous section that ID codifies the special creation narrative in technical talk. In this narrative, a cognitive distortion that promotes mystery and cordons off ID as something special is produced in two ways: the first is by a problematic metaphoric transfer of concepts and second by asserting an anomalous experience.

The concept of ID employs a problematic metaphor. In the surrounding world, there is everywhere apparent the processes of becoming. Generally, we have no experience of things in the world without a causal history, as most can experience the growth and development of the natural world without directly observing a builder or creator. This is not the case, of course, with constructed objects, as we can directly (or relatively directly) observe the constructor(s) or gather empirical knowledge thereof. To compare the two objects, a living entity and the artifact of a living entity, is like, as they say, comparing apples to oranges. They appear to be two different things.

ID also asserts an anomalous experience to characterize a natural process. Regardless of whether or not something was built or grew of its own accord, typical experience does not attest to the instantaneous appearance of things. Built or grown,

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[78] It is important to note the minimalism of this claim. I am suggesting that the idea or concept of ID, that the living world is the product of an intentional designer, is a socially-constructed idea set apart from the conventional world of common experience by a rejection of and opposition to the idea or concept of the development of the living world through the undirected natural forces of evolution. Whether or not ID constitutes a sacred doctrine or sacred text would typically be ascertained within the study of religion and would require a lengthy ethnographical study of associated beliefs, practices, rituals, etcetera at sites where ID is in tangible circulation. My project does not accommodate such a study at this time, and so I make only the minimal theoretical claim of ID as a "thing" (concept or idea, in this case) deemed special based on the identification of ID theories as Christian creation narratives.

experience generally attests to a developmental process—things do not just appear from nowhere. The special creation story draws believers away from typical experiences of the world and into the imagination of otherwise impossible events and demands a valuation of the imaginary over the material.

The imagination is not free here, however. The special creation narrative is a practice of ignorance in that it acts as a cloaking device by embracing a lack of a causal history of the becoming of the cosmos and human beings, ultimately. Special creation is not a description of anything, self-organizing or constructed. It is a conceptual prescription for something inaccessible to modes of intellectual processes, thus it evokes mystery and awe. Indeed, in the ID documentaries discussed in 5.2, the filmmakers accentuate the complexity of the way things are and attribute the whole thing to design with not so much as a nod towards a developmental or causal history of any kind (except they do carefully articulate the developmental history of the ID movement itself). ID is proposed as a story about the way things are, it is a creation story of an un-story—a denial of development and change in favor of a ready-made fixed reality.

ID employs a type of trickery-theology in that it asserts a truth that by definition cannot be, and in this way, ID employs epistemologies of ignorance by substituting mystery-as-knowledge for knowledge. Natural processes, by virtue of being "natural," exclude the supernatural. ID as counter to evolution relies on this dichotomy. "Supernatural" is defined by *not* being natural thus it cannot be a "natural" cause. In other words, "natural" is precisely what "supernatural" it is not. "Intelligent design" thus functions logically as a type of placeholder. Religious studies scholar, Wayne Proudfoot (1985) explains that placeholders—logical operators in which explanation of a

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phenomenon is excluded by its very own definition—creates a type of mystery, a cognitive gap, an anomaly that does not fit with usual experiences of the world (127). As a result, the mystery fosters a sense of awe and reverence because it refers to something outside of common rational experience and is thus often set aside as a reference to something special or extraordinary (151). In the ID argument, one can only know that intelligence was responsible for creation (Meyer 2009), the mechanism by which this happened is not even part of the question. The designer simply spoke, or so the story goes. The origins of the cosmos is thus set apart as something mysterious, miraculous, and outside the empirical realm. Although ID is presented as scientific, impartial, and objective, its underlying identity as a Christian creation narrative, thus its relationship to the sacredness of that story, contributes to the identity of ID as a "thing" deemed special.

5.3.2 ID and the Ascription of Authority

The process of deeming something special involves a network of relationships. Once something is deemed "special" it can be taken up in a complex of beliefs, practices, and experiences (Taves 2009, 879 KL). Whatever the specific cause, singularization has significant effects, particularly in regards to establishing relationships. By deeming something a mystery, a link is created between those giving the explanation and those receiving the explanation placing them in a hierarchical relationship. By declaring the origins of the cosmos as being beyond the boundaries of natural causes and explanations, a mystery, ID proponents enact a relationship between those with that (privileged) knowledge and those without it.

ID is not just about the cognitive orientation of individual believers; rather, it involves a rather large group (and subgroups) of participants. In the case of ID, one might

ask: Who is/are the benefactor/s of the epistemic authority brandished by ID theory? I am claiming in this section that ID establishes not only an epistemic space but also a hierarchical epistemic structure. This claim implies that in the hierarchical stratification, ID proponents are above others, but to see who this relationship involves, we need to look just a bit more closely at its audience and how the epistemic authority of ID is situated in relation.

ID material seems to be primarily directed at a Christian audience as much of this material is created by evangelical Christian publishers and distributed and sold within Christian markets (Radosh 2008). Often the material is presented in technical and sophisticated mathematical and scientific language. These texts are typically intended for the "educated lay audience," a point that Dembski makes explicitly about his own text (2001, xvii). But Dembski, however, also provides a roadmap for nontechnical readers suggesting which sections of his text can be skipped or lightly perused "without loss" (xx). Dembski, in his book *No Free Lunch* (2001), explains that his strategy is "to include just enough technical discussion so that experts can fill in the details as well as sufficient elaboration of the technical discussion so that nonexperts feel the force of the design inference" (xvii). When these texts are considered by experts, or those with the technical background in the areas upon which the texts draw, they are repeatedly evaluated as logically and/or scientifically unsound. This does not dam the steady stream of new texts that appear on the market,[79] but the audience for these texts then cannot be the scientific community because they do not meet the standards that the community demands and are

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[79] A list of ID new releases can be found here:
http://astore.amazon.com/discoveryinsti06?node=37&page=2. Last accessed January 11, 2014).

typically not accepted.[80] The audience for these texts must be, it seems to me, some subsection of a community that is already sympathetic to this view and who would benefit from drawing on ID's authoritative clout—people such as pastors, ministers, and other congregational leaders. I am suggesting here that these texts provide epistemic tools for religious leaders (who would also generally have the educational background to be able to interpret these texts within a Christian, if not scientific, framework), and symbolically bolster epistemic authority of ID proponents and those who draw on their work to make claims about how the world is and ought to be.

In an online interview, Stephen Meyer (2013) suggests that if nature is undirected and a product of chance, then God does not know the future, and is thus unable to offer guidance—there is no meaning and no purpose. ID alleviates this problem by positing an ever active designer. Not only is "God" a tenable thesis, but according to the Logos theology of John's Gospel, The Word instantiates the spiritual world on Earth in the person of Jesus. Jesus as God and the Holy Spirit animate humanity in that they are always present and always active. Due to its spiritual or non-material nature, one cannot directly gather empirical evidence of God's guidance via personal revelation or experience (apart from how one subjectively describes such an experience); however, one can directly observe the guidance provided by pastors, ministers, and the like that are deemed leaders in collectives that purport to seek God's guidance. Those who employ ID to sell their message capitalize on its authoritative value. In the case of ID, proponents deploy the authority of its symbolic science and merge it with biblical and theological authority that they create by designating the origins as mystery. The fusion of science and faith strengthens and

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[80] I want to be clear here that some ID advocates do scientific work that is accepted and validated by the scientific community, but this work is not ID work itself. I am specifically referring to ID texts in this case.

increases its value and shifts the balance of power in the favor of ID, its proponents, and those who utilize ID in their religious assertions.

Now before we go any further, it is important to note that the power structure that I have suggested in regards to ID is not itself an anomaly. Taves (2009), drawing on a plethora of evolutionary scholarship, suggests that setting things aside as special is likely a tendency favored throughout our evolutionary history for the purpose, among other things, of creating group stability—a necessary practice for survival in many cases. Whether or not this is actually true matters less than the fact that human societies seem to accomplish a great deal when working as a group, and the development of management techniques is quite reasonable and no doubt necessary. Being normal, sensible, or necessary, however, is no reason to bracket such groups and their management techniques from scrutiny.

Coupled with the tendency to designate things as special, an interesting dynamic is created within the realm of ID. Designating things as special is often accomplished by enacting prohibitions against combining and comparing the thing of note with other similar but conventional things. If we think of ID as a mystery, as something special or extraordinary, it makes sense that it would lose this status in the presence of evolutionary explanations (even theistic ones, as this weakens the taboo of evolution and dilutes the potential political power of ID). It makes sense that ID advocates would see evolution as evil and taboo and seek to protect the mystery of origins. Furthermore, the relationships enacted through the proffering of mystery, of course, are jeopardized by demystification. Taves writes: "Narrowly conceived, human violation of the taboo will in fact make the special thing ordinary; broadly conceived, however, it will cause everything the thing set apart represents to collapse (that is, specific relationships and, by extension, potentially the

whole social and cosmic order)" (2009, 760-762KL). This issue is not just about *what* the

best explanation is, but *who* has the best explanation.

5.3.5 Section Summary

In this section I have aimed to show the mechanics of religion in ID. ID, through

the proffering of mystery, constitutes a "thing" deemed special and provides a subgroup

within the Christian space epistemic advantage and authority. It enacts a stratification

within the epistemic space.[81] Deeming something special is often accomplished by

prohibiting the comparing and combining of the special thing with similar but

conventional things. Thus, it makes sense that ID advocates get much epistemic traction

by attacking evolution.

By proffering mystery and then claiming to "know" or have insight into said

mystery (even though it is by definition unknowable), ID advocates establish themselves

as an epistemological authority in a category outside of denominational divides and

above the common Christian. Whether there is a god or not, there most certainly is a

social structure where [God's] representatives inhabit and proctor spiritual, epistemic,

political, and economic activities. ID advocates benefit from its use and uptake in

designer-friendly domains and ID users benefit from its authoritative status. By

proffering mystery-as-knowledge for knowledge itself, ignorance is manufactured with

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[81] What I am *not* suggesting here, is that this stratification is in any way stable or clearly delineated within
actual groups of actual people. People may well traverse between these various levels at different times and
in different contexts. Nor am I suggesting that this is intentional on the part of any of the parties involved.
It may or may not be, but this seems to be a question that would best be addressed in an ethnographical
study and is beyond the scope of my project.

epistemic authority. This authority is threatened by demystification of evolutionary theory.

5.4 ID and the Construction of a Collective

Two layers of ignorance have been discussed thus far. The first level of ignorance discussed involves the dichotomizing of evolution and ID by the assertion that evolution is in opposition to ID. Setting up this space entails ignoring expert information by valuing common sense faith-based "scientific" perspectives over knowledge. Within this space, another form of ignorance is enacted by substituting mystery-as-knowledge for knowledge and utilizing this substitution as fuel for epistemic authority in the creation of a hierarchical structure. In this section I suggest that ID discourse also deploys collective ignorance by employing various elements from its antievolution methodology toolbox.

Recall from 5.2 that collective ignorance comes into play when group experience and starting beliefs structure epistemic operations such as judging the validity or plausibility of knowledge claims (Alcoff 2007, 45). This section aims to show that ID advocates employ the antievolution methodology to create collective ignorance necessary to populate the epistemic space they have created. The key element of the antievolution methodology employed here is the use of symbolic science as discussed throughout Chapter Four. From the repository of evolutionary critiques (see 4.2), ID discourse draws on the doctrine of certainty to exploit the perceived dangers of evolution. From the science-as-a-source-of-authority toolbox (see 4.3), stories from highly credentialed academics of abuse by the scientific community are used to validate their claims of oppression, and from the science-as-defense toolbox (see 4.4) ID discourse creates

emotional and cognitive dissonance in the construction of the scientific Other that acts as a defense mechanism to garner audience sympathy and discourage rational engagement with the theoretical dimensions of both evolution and ID. Taken together, this methodology creates a collective ignorance that works to gain or keep supporters.

5.4.1 ID and the Creation of Cognitive/Emotional Dissonance

One of the ways that ID proponents instantiate the antievolution methodology is through the deployment of symbolic science. ID proponents manufacture a set of starting beliefs (that evolution is invalid) by constructing a scientific Other and portraying it as a bully and oppressor not to be trusted. Portraying the Other as an oppressor and bully involves the creation of emotional and cognitive dissonances as a productive epistemic practice. Recall that the construction of the Other is a defense strategy in that the cultivation of sympathy for being bullied and oppressed deflects attention away from the logical dimensions of the theory thus lowers the chance of critical engagement and possible rejection.

The film *Expelled* (Frankowski 2008) is a powerful example of the use of emotional manipulation. In this film, a comedic tone is set up with the cover image of host Ben Stein dressed as an over-aged schoolboy in the rebellious act of spray-painting graffiti on a white brick wall (see Figure 4). Throughout the movie, Stein, in a business suit and sneakers, approaches his targets with his trademark monotone timbre and dry lifeless critical (supposedly witty) commentary. Thus this "documentary" is situated as a light and unobtrusive exploration by a simple representative of the "common people." Juxtaposed against the comic backdrop, right from the opening black and white title frame (see Figure 5), is a Holocaust narrative replete with images of immense human depravity such as those

of hunger-ravaged human corpses piled in a massive heap outside the iron gates of a Nazi concentration camp. Rational thought becomes a difficult task for anyone with even a modicum of empathy. It is not the association of the Holocaust with evolution that is the biggest problem, and indeed other documentaries have asserted links between various theories and such atrocities. The issue that I am concerned with is the conjunction of comedy and outrage. This movie is not about rationality, documentation, or argumentation. It is an obvious work of persuasion, or propaganda, in this case.

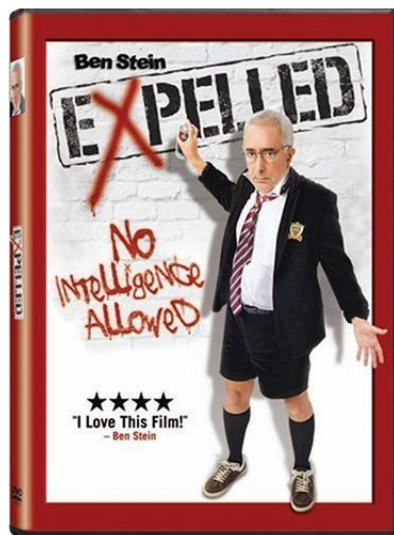**Figure 4: Cover Image of Expelled. The image from the cover of this film portrays a comical scene by juxtaposing the adult in student school uniform and education with non-intelligence.**

Figure 5: Opening Credits of Expelled. This image is from the opening credits of the movie and follows directly after a series of film clips of Nazi Germany. This is a stark contrast from the cover image in Figure 4.

On another level, emotional confusion is created by the structure of the film. The first half of the movie is dedicated to an attack on the scientific community that refuses to accept what ID proponents assert is a scientific theory and not religious ideology. It first constructs the scientific Other, and in the latter part of the film, shows the dangers of the Other's dominance. The latter half focuses almost exclusively on a speculative characterization of what society would be like without religion: anarchistic, atheistic, and awash with stifling dictatorships, torture, death and destruction. This film is formatted so that points of the filmmakers' argument are supplemented by short film clips, mostly in black and white, that provide a hyperbolic and often humorous (supposedly) commentary on the dialogue. This movie is dense with these clips. The exchanges are quick and emotionally provocative making it difficult to sustain rational engagement with the issues or to even differentiate fact from fiction.

The argument in *Expelled* can be summarized as an attempt to show that ID is suppressed and ID advocates are oppressed. Their means of constructing the science bully compels disorientating mental and emotional gymnastics that promote an irrational mental fog. That this is a tactic used by filmmakers in other genres renders this work a manifestation of creative license, to some degree, but of importance here is that a key part of the ID strategy is to claim oppression and draw on its emotional appeal. This tactic plays on an appeal to sympathy for the underdog and exploits emotional reaction to discrimination and oppression to gain leverage for their arguments in the minds of many (Ravitch 2010, 157). This tactic recalls the informational ignorance discussed above in that ID advocates sequester the public from the knowledge of experts, which works to prevent disclosure and protects the public's ignorance.

ID discourse employs scientific authority by often drawing on the stories of highly credentialed academics to validate their claims of oppression, but this tactic also relies on confusion. For example, at one point in *Expelled*, ousted scientist Richard Sternberg is asked about the negative reaction of the scientific community to an article advocating ID that he published as editor of *Proceedings of the Biological Society of Washington*. The outrage of the scientific community is depicted as ridiculous, even downright bullying, and this point is hammered home by a series of slap-stick film clips that punctuate a recital of each objection, one by one. A number of other academics are interviewed and speak of the negative repercussions of attempting to do ID research within academia. The point is clear, ID is so hated that the academic community will turn on its own members if they are in anyway affiliated with that perspective.

ID *is* excluded mainly because it does not meet the criteria that the scientific community demands and utilizes science symbolically to its own advantage. This is not oppression, however. In *Expelled*, ID proponents, donning sackcloth and ashes, so to speak, shuffle in slow heavy pageantry into the dark spaces at the outskirts of science. The main purpose of this location seems to be that it provides close enough proximity from which to launch audible, if ineffective, assaults. *Expelled* ends with an altar call of sorts that encourages the audience to take up arms in the war against evolution and fight for a just society as an intelligent designer would intend them to do. In so doing, the antievolution methodology does its work to populate the epistemic space that ID creates.

5.4.2 ID and Fear

From its repository of antievolution tools, ID advocates draw on the doctrine of certainty to draw and keep supporters. In the historical overview in Chapter Three, the doctrine of certainty was seen to motivate resistance to evolutionary theory in an era when scientific methodology was demanding solid "proof" of knowledge claims, but Darwin's methodology was based on probable truth. Over the course of time, science accepted and accommodated probabilistic methodologies, but this doctrine is reprised and amplified in ID as advocates often assert the accidental, un-purposeful, and ultimately disinterested nature of evolution in a way that accentuates fear and insecurity.

In an interview with the host of a Christian radio program, Stephen Meyer (2013) explains the dilemma that people (even theistic people) find themselves in if they accept evolution theory. He says:

> If there was purely undirected unguided process that
> produced everything, such that even people who are
> theistic affirm that, and these are some of the folks
> called theistic evolutionists, would affirm the
> Darwinian creation story, but then recognizing that
> the Darwinian mechanism is unguided and
> undirected, would then conclude "well therefore
> God doesn't know the future" because the
> mechanism is unguided undirected therefore
> unpredictable. (5:00)

The implication here, and as Meyer goes on to explain, is that from an evolutionary perspective there is no innate meaning or purpose for life. In other words, nothing is

certain or reliable and there are no absolutes. At the heart of such dialogue is a cultivation of fear—of the unknown, of being alone, and of being insignificant.[82]

Vulnerability is exploited even further by arguing that evolution entails an erosion of human dignity. Stephen Meyer often cites philosopher Peter Singer's position on animal rights as evidence of this connection. In one interview, Meyer says (2013) that Singer advocates that from an evolutionary perspective there is no qualitative difference between humans and animals (24:32). He goes on to recount a portion of one of Singer's arguments that posits that there is no moral difference between a cow or a chicken and a newborn baby, and in fact, the chicken is of greater value because it is of greater utility whereas the newborn is a drain on resources. Of course this is very selective cherry-picking and skewing of Singer's philosophical work, but the point of the recitation here is to excite the audience's sympathies against Darwinian evolution. Meyer explains that Darwinian evolution as a worldview or dominant thought form is dangerous because it entails no moral imperatives, no recourse for free actions, and no leverage for managing social order. In other words, in a world of chance—unguided and undirected—people can do whatever they want. ID advocates denigrate evolution by identifying it as the epitome of philosophical naturalism which they see as uncertain, amoral, and un-authoritative. In this way, ID advocates cultivate not only existential fear, but fear of physical harm and death.

It is no coincidence that ID literature often links evolution to social injustice and once again recycle critiques from an earlier era of antievolutionism (see 3.3). In the film *Expelled* (Frankowich 2008), the filmmakers strategically place gruesome images and film

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[82] I want again to say that I am in no way suggesting that these tactics are unique to ID or an anomaly of some sort. Exploiting typical social fears and anxiety is arguably a key marketing tool in any genre. The point here is simply to point out this element of ID discourse as it pertains to the larger claims of this project.

clips of Nazi Germany directly after segments of interviews with evolutionists. ID proponents equate the rejection of ID as a science to an infringement on academic freedom and imply that such an infringement leads rather directly to full-scale dictatorship. This association is no passing inference as ID discourse routinely blames Darwinian evolution for the eugenics movement with which Nazi movement is associated.[83]

ID discourse associates the exclusion of ID with captivity and containment. Much of the visual commentary inserted throughout the film depicts walls, fences and various other forms of partitions as a symbol of the demarcation between mainstream science and everyone else. In the first three minutes of this film, the word "freedom" is used eight times merging the rejection of ID "science" with threats to personal, religious, and national domains. Metaphors of containment and confinement are interspersed throughout this David and Goliath-ish narrative that pits the little commonsense notion of ID against the big bad and powerful giant: Science.

5.4.3 The ID Remedy

Drawing on the doctrine of certainty to instantiate fear is in some ways an easy tactic. Erinn Gilson (2011) argues that conventional definitions of vulnerability (which tend to follow from or partner with uncertainty) historically entail a *de facto* negative state which has engendered an attitude that seeks to banish all forms thereof. "Vulnerability is understood to be a more general term encompassing conceptions of passivity, affectivity, openness to change, disposition, and exposure, which are the basis for certain fundamental structure of subjectivity, language, and sociality" (310). Though a necessary condition for

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[83] An article entitled "The Darwinian Basis of Eugenics" (Gardiner 2008) is a good example. It is only one of many. This article can be found here: http://www.discovery.org/a/7251. Last accessed June 29, 2014.

numerous creative processes, in Western culture, vulnerability is typically considered a weakness or a problem that must be overcome. ID moderates vulnerability in a very traditional way: it proffers a benevolent Designer.

The concept of a benevolent Designer is apparent in ID literature, despite the anonymity of the designer. As one author puts it: "intelligent design unfolds in the invisible hands of the great designer" (Wexler 2011, 7). Security is only possible if the designer is benevolent or at least has a person's best interest in mind (one may accept that suffering is for the greater good, for example). Authors Moreland and Craig (2003) explain that one need not dwell in discomfort or worry but dwell in the security of the Designer's plan with faith in a divinely ordered future, for it is the Designer who tends to the morrow and directs the unfolding of the dynamic and complex world (266).

ID offers more than just an anti-vulnerability cloak as ID membership has its privileges. On a spiritual level, belief in a designer allows for meaning and purpose that wards off fear and insecurity, despite the fact that the fear was induced by ID to start with, in this case. Not only does ID logically permit meaning and purpose, it also permits an intentional designer that is specifically concerned with each individual thus allowing for the sanctity of humans and a continuous guiding force to aid in the journey through the temporal realm. In this epistemological inversion, freedom, or an open and unstructured future, is a bane and persecution, and the restrictions of a scripted future is a boon, though advocates would likely claim that it is the other way around.

For consumers of ID discourse, it makes a certain kind of sense to buy into the ID narrative when the doctrine of certainty is exploited in a grand scientific spectacle. No doubt this narrative is attractive to many when the perils of uncertainty and the unknown

are accentuated in contrast to the redemptive-like message of meaning and purpose that comes packaged in ID. In this way, collective ignorance is manufactured in that the audience is encouraged accept the alleged security of an intentional intelligent agent who is said to provide meaning, purpose, and, ultimately guidance. In return, the accepting audience consents to the adoption of mystery-as-knowledge as knowledge itself and becomes or remains signatories to a numinous contract—an agreement to not know.

5.4.5 Section Summary

In this section, I suggested that ID draws on the doctrine of certainty to populate the epistemic space it has created and hierarchically structured. This is accomplished by extolling the dangers of subscribing to an evolutionary worldview in which unguided natural forces are the primary causal agents in both the physical and social world. In contrast, ID suggests that a safe haven is to be found in the guidance of an intelligent agent. ID audiences are compelled to adopt and/or support an ID perspective thus they move into or remain in the ID epistemic space.

An epistemology of ignorance is a necessary element of this antievolution toolbox. In one way, ignorance is practiced by over-valuing security and certainty thus promoting closure to new knowledges and creative novelty that might arise from dynamic interactions with the unknown. In a more significant way, however, collective ignorance is constructed by deploying cognitive and emotional dissonance to influence the audience and encourage a cohesive starting belief—that evolution is bad/wrong. Accepting ID entails accepting mystery for otherwise available knowledge, thus it entails a tacit agreement to not know.

5.5 Conclusion

In this chapter I have aimed to show how ID utilizes its antievolution toolbox to create, structure and populate an epistemic space. The knowledge claims that ID makes mark this space as Christian and create mystery that, like the mechanics of religions in general, procures a type of sacred exceptionalism that proffers epistemic advantage and authority. The knowledge claims articulated in ID are thus claims of mystery or ignorance.

Epistemologies of ignorance are the backbone of the ID epistemic framework. The epistemic space is created by dividing the landscape into two opposing sides, forcing the audience to choose. This choice is weighted in favor of ID by the deployment of informational ignorance accomplished by flooding the audience with details and discrediting experts and expert knowledge. The epistemic space is hierarchically structured by the mystery entailed in the knowledge claims that ID makes—irreducible and specified complexity. These claims assert an anomalous experience of the appearance of things in the world instantly and ahistorically. ID advocates garner epistemic advantage and authority by claiming historical knowledge of something that their knowledge claims identify as having no history. This is to say that they claim knowledge of something that by their own definition is unknowable. The hierarchical structure is thus a practice of systemic ignorance in that it forms the basic structure of the epistemic space. The epistemic space is populated by compelling audience acceptance through the exploitation and alleged dangers of the uncertainty of an evolutionary worldview and contrasting that with the security said to be provided in the ID perspective. Collective ignorance is an integral element of this process because those who accept ID must also

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accept the mystery-as-knowledge for knowledge itself. Those who accept agree to ignorance.

The work done with the antievolution methodology has significant implications. It creates a conceptual space for political purposes. That is to say that the epistemic framework of ID is not really about knowledge or ignorance per se; rather, it is about politics—the power dynamics of social relationships. Epistemic advantage and authority, such as is garnered from the epistemic practices within the ID discourse, gives license for statements on how the world is and how the world ought to be. Furthermore, the construction of a collective, in this case based on a conceptual consensus of the mystery of origins, provides the political power to potentially translate normative beliefs into public policy and/or social-organizing practices.

Given this potential power for political influence, it is imperative to look closely at what normative beliefs are associated with ID. This is where I turn next. In the next chapter I explore these normative beliefs and show that they are largely concerned with gender and sexuality. More specifically, they assert constrictive and regressive sexual politics.

CHAPTER 6 ID AND ITS MISSION

6.1 Introduction

To this point, we have examined the history of ID, the "science" of ID, its role in garnering epistemic authority and motivating a conceptual collective. ID is a potentially effective political tool, and so, I want to look more closely at the politics of this movement. Recall from Chapter One that it was the pairing of ID with political action in regards to such issues as transgender rights that inspired this project. Investigations into ID have centered on law, education, science, and/or religion, but very little research has been focused on its connections to sexual politics. In this chapter, I will delve into this aspect of ID to show that ID compels political activism for constrictive and regressive social-organizing practices, specifically in regards to sexual orientation and gender equality.

This chapter seeks to make the connection between ID and sexual politics explicit. To do this, Section 6.2 will sketch how and why ID is significant to the Christian-right (CR). ID is a pillar of the CR worldview and is harnessed to legitimate and justify a biblical framework from which normative beliefs are drawn. Political activism seeks to instantiate these beliefs into public forums.

Next, Section 6.3 provides a brief overview of natural law and morality, as this is a key concept that anchors ID to sexual politics in this discourse. ID advocates argue that humans and human nature are products of an intelligent designer, and that their design inscribes natural moral parameters into biology and society. ID advocates claim that natural law can be discerned by a common-sense reading of the natural world ("natural" behaviors lead to positive or beneficial outcomes and vice versa) and by paying careful

attention to one's conscience. Furthermore, ID advocates argue that human beings, particularly since the introduction of Darwinism, have cultivated a collective turning away from the guidance of natural law and thus are suffering from a denigrated sensitivity to the guidance offered by conscience and natural consequences. Political intervention is therefore seen as necessary to restore social wellness and promote human flourishing. Political intervention, on this view, is an act of benevolence.

In Section 6.4, after laying out the basics of natural law, I will discuss in greater detail the connections between the ID view of natural law and its application to social-organizing practices. ID advocates are not merely concerned with how the origins of the physical world are explained, indeed, one might argue that this is the least of their concerns. At issue is a system of social-organizing practices that are justified and legitimized by ID and extrapolated in the concept of natural law that ID advocates posit. This extrapolation serves the broader social aims of compelling a social structure that is dimorphically gendered, prescribes gender-specific moral obligations, and renders all non-monogamous non-marital heterosexual sexuality as unnatural and immoral. The focus on gender and sexuality in ID discourse is a bid to impose control and secure a place of dominance to further specific political aims.

Section 6.4 also takes a closer look at ID discourse to get a better idea of just what, more specifically, ID advocates identify as "natural" and "moral" (or "unnatural" and "immoral," to be more precise). This section will survey the explicitly political dimension of ID discourse. The Discovery Institute hosts a large roster of associated fellows whose writings are pooled and promoted on their website. While gender and sexuality are not the only concerns, they are prominent in a number of ways. For

example, there are a large number of articles and publications denouncing homosexuality, abortion, and promoting traditional gender roles. In this section, I will showcase some of this discourse and the arguments that are employed, and I will provide a discussion of some of its potential impacts. It is in this element of the discourse where the potential impact of ID is the clearest.

This chapter draws, often tacitly, on the previous work of this project. The Christian framework of ID, like the theory of irreducible complexity itself, posits a biblical worldview that is asserted to be fixed, unchanging, and ahistorical. ID discourse posits a set of ideals in regards to gender and sexuality that are, in some places of the discourse, expressed explicitly. Furthermore, in the way that creation is understood as a product of divine utterance or divine Logos, the instantiation of the gendered social order is an imposition of mind (read: thought, intelligence, ideology, conceptual realm) over the physical or material order of the world.

Though not a focus of this chapter, throughout we will see that the sexual politics of ID utilizes a number of previously identified ID tactics. The application of ID to legitimizing social-organizing practices employs an epistemology of ignorance in that it is a means of instilling ill-informed religious ideology in public policy. I say "ill-informed" because, recall from the previous chapter, ID substitutes mystery-as-knowledge for knowledge itself, and so the claims that ID advocates make amount to a declaration of what the moral parameters of human beings should be and largely veils numerous of ways in which the world, including human beings, actually is. ID-based declarations are not evidence-based but are transduced from biblical ideology and transported into the realm of truth by divine proxy. The assertion of natural law utilizes

an appeal to common sense in the manner of ID tactics previously discussed that deflects attention away from the power-plays in the discourse. In these ways, ID discourse as a concern with the history of the living world is but a distraction from its concern with directing its future.

6.2 ID and the CR

In the previous chapter, I suggested that it is very important for advocates to protect ID from the threat of evolution in order to maintain the epistemic structure and authority they have created. In this section, I suggest that this structure has even greater significance because it is the keystone of the biblical worldview that is in turn a keystone of the CR. ID is a fusion of scientific and religious legitimation and is utilized as the foundation upon which Christians, evangelical Christians specifically, can situate their ways of knowing and being in the world.

In *The Sacred Canopy* (1967)*,* Peter Berger provides a discussion of religion that is helpful in understanding the place of ID in the worldview of the CR. On this account, Berger asserts that the need for order and structure is a primal motivator of human beings and spurs the collective construction of ideas and beliefs that are projected outwardly onto the world. This process leads to "objectivated knowledge," or knowledge that has come to be understood as something real, exterior to, and distinct from the human and social body from which it emerged. This knowledge is produced by the social collective but it also affects the social collective as elements of this knowledge are internalized and reproduced by individuals therein. Religion, according to Berger, is the legitimation of this knowledge in that it is utilized as both explanation and justification for social order.

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Berger posits that religion has been a primary form of legitimation throughout the development of the Western world though its prominence has faded dramatically. His thesis, known most readily as "secularization" was that while belief in the sacredness of the cosmos motivated a certain orientation toward knowledge and knowledge production, the rapid infringement of science as an empirical knowledge source superior to sacred revelations and the separation of social institutions from religious ones brought about a process of secularization (Billings and Scott 1994). Berger predicted and others agreed that secularization would push religious legitimization to the margins of the modern world, and perhaps religion would fade from view entirely, though Berger later retreated from this position (Kokosalakis 1985). Berger proposed objectivated knowledge as dialectic—produced by social construction and simultaneously constructing the social— which is to say that religious tradition is deeply rooted in the fabric of society, and given this understanding, it seems quite impossible to imagine religious legitimation fading from social/political significance, though it is perhaps less recognizable than in previous eras (Kokosalakis 1985, Billings and Scott 1994).[84] It the contemporary era, however, the increase of secularization has led to the waning of the tendency of religious apologetics to appeal explicitly to sacred perspectives in many cases, and the trend now is to appeal to science for legitimation (Lewis 2010).

The movement from sacred to secular that Berger (1967) suggests adds a dimension of explanation to the ID movement. Prior to the modern era, religions constituted a "sacred canopy" that provided a conceptual structure that explained and justified social order and social-organizing practices. This perspective granted ultimate or

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[84] Berger later turns from secularization theory altogether and instead favors the notion of continuity and surge (Kokosalakis 1985).

transcendent reality to socially constructed reality and provided meaning and order to stabilize the fluidity of socially constructed knowledge. The knowledge economy that bloomed over time from the Enlightenment and Scientific Revolution challenged this canopy and disrupted its conceptual structure. What ensued was a gradual secularization of society with a proliferation of pluralism and competing worldviews. Traditional knowledge that was once taken largely without reservation was now subject to intellectual scrutiny, and for those in the business of relying solely or even primarily on sacred revelation for explanation there was only one choice: adapt or die (Furthseth 2006).

The social domain, says Berger (1967) is an extension of biological structure into the conceptual world. What motivates this activity, suggests Berger, is an essential need of humanity to establish order and ward off chaos (1967, 12). Legitimation is the means of justifying social-organizing practices—the order of position, power, and institutions that structure what otherwise appears to be an unruly, threatening, and dangerous cosmos. Legitimation conflates exposition about what is and what ought to be.

ID is an extreme case of religious legitimation by science. It does not simply draw on scientific inference to back up religious doctrine; it offers religious doctrine as a scientific claim. In the ID framework, the sacred and the scientific are fused into one canopy.

The production of ID as legitimation is only part of the story, the other part concerns how ID is utilized. In *Creationism's Trojan Horse: The Wedge of Intelligent Design* (2004), Barbra Forrest and Paul Gross document the connections between the ID movement and the CR. Funding for the various elements of the ID movement has come

mainly from large evangelical organizations who, along with providing funds, contribute in other ways such as distributing ID texts and conducting promotional campaigns (161, 265). Forrest and Gross noted that in their rather large-scale survey of the issue that most evangelical organizations support the ID movement (9).

Of significance for this project, is not so much how organizations give to the ID movement, but what they take from it, or, in other words, how they use it. Many CR groups explicitly list ID as central to their worldview. Sean McDowell is the owner of Worldview Ministries and co-author with William Dembski of *Understanding Intelligent Design: Everything You Need to Know in Plain Language* (2008). In this book, the authors state that the story of creation designates meaning and purpose and is central to Christianity (18). McDowell has published widely on ID and other issues related to Christian apologetics, and his CV boasts a wide array of speaking engagements and public appearances.[85] McDowell's work is focused on "imparting hard evidence and logical support for viewing all areas of life through a Biblical worldview."[86] In a similar manner, Focus on the Family, (FOF) a large CR organization with branches throughout the world, including Canada, offers a training series entitled *The Truth Project*. This series is a set of self/group studies of the basic elements of the Christian worldview with the objective to counter the decline of the understanding of key biblical concepts among professing Christians.[87] After a series of lessons designed to establish the truth and

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[85] These articles can be found on the Worldview Ministries website: http://www.seanmcdowell.org/index.php. Last accessed June 29, 2014.

[86] This quote is taken from the "About" page of the Worldview Ministries website: http://www.seanmcdowell.org/index.php/about-us/bio. Last accessed June 29, 2014.

[87] See website: http://www.thetruthproject.org/whatistruthproject/. Last accessed June 29, 2014.

authority of God and the Bible, Lesson Five seeks to establish that science points to reality of a universe intelligently designed by God. That ID legitimizes a biblical worldview is easily demonstrated, but the full force of its power is significant but understated in these examples.

What makes ID so powerful as a pillar of a biblical worldview stems from the dualistic structuring that I have described in Chapter Five. As with any conglomeration of this sort, there is a diversity of beliefs and interpretations of the Bible, but Dembski (1998b) suggests that focusing on a common enemy—evolution or material naturalism— provides a basis for unification, and this in turn provides a basis for a stringent set of socially directed beliefs. The power of united action is dramatically increased by the size of the collective, which, in cyclical fashion, increases the size of the collective. The CR involves groups of Christians with various biblical interpretations and doctrinal bents, though there are, however, a handful of non-negotiable items such as the absolute truth of the Bible and the belief that God created all things, just as written. Rather than providing a common ground for diverse interpretations, however, ID provides a common adversary.

The minimalism of ID provides a unification of sorts which makes it very valuable as a political tool. For example, creationists do not agree on the timeline of creation: some espouse young earth creationism (see McKay undated, for example), [88] and others, such as Stephen Meyer (2009) and the Discovery Institute subscribe to the understanding of the earth as perhaps millions of years old. [89] Young earth creationists

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[88] John McKay as a leading young earth creationists. His website can be found here: http://www.askjohnmackay.com/questions/answer/thousands-or-millions-why-doesnt-peter-say-day-is-million-years/. Last accessed July 4, 2014.

[89] Moreland and Craig (2003, 356) explain that, in theory, all creationists fit into the basic concept of ID, but the opposite is not true. Some ID advocates reject young earth creationism, for example.

tend to argue that ID advocates fall short by not identifying the designer as God of the Bible, yet, often, ID resources are utilized in their evangelical material.[90] Christian philosopher William Lane Craig (Moreland and Craig 2003) explains that "in principle, advocates of young earth and progressive creationism are participants of the ID movement, though there are intramural differences among those participants. But the converse is not true" (356). This is to say that any form of creationism can reasonably subscribe to some minimal notion of ID, though ID theory cannot validate every theory of creationism. Through the minimalism of ID, Christians can unite against the common threat to their own individual perspectives, and in this way, ID unites the CR in a powerful way—by focusing not on a common belief or doctrine but on a common cause.

ID is not just one element of belief among others within the worldview of the CR. ID is a form of legitimization in that it functions to anchor biblical text to material reality. For believers, ID confirms the Bible as truth, but it does more than that. ID fuses truth and authority by proffering a scientific guise that makes ID appear to be detached from what is often deemed to be the less reliable realm of faith and belief. It is not so much the content of ID that makes it a powerful cornerstone of the CR. The form of ID, seemingly detached from specific doctrinal constraints, makes it a powerful tool for asserting an ultimate morality and for uniting a broad spectrum of believers into a potentially powerful political entity.

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[90] For example, see: http://blogs.answersingenesis.org/blogs/ken-ham/2011/08/31/intelligent-design-is-not-enough/, http://www.icr.org/article/intelligent-designer-movement/, http://creation.com/cmis-views-on-the-intelligent-design-movement, http://www.answersingenesis.org/articles/tj/v14/n1/designer, http://www.icr.org/article/egg-chicken-conundrum/, http://creation.com/refuting-evolution-2-chapter-10-argument-irreducible-complexity. Last accessed June 29, 2014.

The doctrine of design, for the CR, entails a biblical worldview that has specific

ordinances for behavior and social organization. "Design, especially as it relates to God

creating the world, lies at the heart of all that Christians believe," writes Nancey Pearcey

(1999, np).[91] The CR generally asserts that the world was created by God, the father, and

he provides the best insight into what is necessary for the well-being of the world and

humankind. The CR is also eschatological in that it looks forward towards an other-

worldly utopia. Adherents are motivated by concern for a fallen humanity, hope in a

future perfection, and the conviction to live according the prescriptions of the creator to

this end. Those who draw on ID draw on its authority to assert what they believe to be

biblical imperatives in the public domain. Such assertions are leveraged by the concept of

natural law.

6.3 ID and Natural Law

Natural law as a religious doctrine has been reinvigorated in ID discourse. In this

discourse, natural law is said to be imprinted on the living world by the work of a

designer and it applies to both the biological and social domains. Furthermore, it dictates

what is beneficial and what is detrimental in both areas. ID theorists assert that human

nature entails a dimorphic gender structure replete with gender-specific roles and moral

obligations that are set by biology and dictate social-organizing imperatives. This section

will examine the uptake of natural law in ID discourse by exploring how, according to ID

advocates, it is expressed, how it is known, and how it is connected to the social world.

Whereas natural law in the traditions of Augustine and Aquinas was fleshed out into an

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[91] See the full article here: http://www.discovery.org/a/165. Last accessed June 29, 2014.

elaborate theology, ID advocates posit something much more basic. In this context, "natural law," writes Philip Johnson (1987, 217) "refers to a method that we employ to judge what the principles of individual morality...ought to be."

Once again, it would be helpful to lay out the course that this subsection will take. This subsection will show that ID advocates make the following arguments: 1) natural law is enacted via design that includes both purpose (or what something is intended for) and function (or what it actually does), and it applies not only to the physical world but also to human nature; 2) natural law entails a moral structure that is an essential element of every person and will promote flourishing so long as this structure is intact; and, 3) humanity's moral compass has been damaged by a social history of self-destructive behavior (read: sin), thus, political action is necessary to guide moral behavior. Based on this understanding of natural law, ID advocates, as we will see, posit their own ideas of the moral parameters for gender and sexuality.

ID advocates assert that natural law is expressed in structure via design. As William Dembski (1999b, 151) explains, natural law is visible in the constraints of design in that design determines functionality. When something reaches or exceeds structural limits, functioning is poor or ceases entirely. This idea is extended to social contexts by an assertion that human nature is also subject to design constraints, and should those constraints be transgressed, then both individuals and society will suffer (Dembski 1999b, 151). In this way, natural law can be understood as a reliable foundation upon which social law and organizing practices should be built. It is the fundamental element that joins what is and what ought to be.

In this context, there are several ways in which one can know what the natural laws are. One way is through discovery, or by watching for what actions or behaviors work and which ones do not (Dembski 1999b, 151). In this move, ID proponents once again appeal to common sense as the basis of their argument. Insofar as design is an instantiation of natural law, it is argued that natural law stands above political law, is readily accessible, and difficult to ignore (Robison and Richards 2012).

The interpretation of natural law, though apparent and often obvious or common sense, according to Philip Johnson (1987), is contingent upon proper reasoning. Indeed, says Johnson, the interpretation process involves starting with assumptions about human nature—what is beneficial and what is not—and then proceeding by figuring out what behaviors and practices should be allowed and which ones not (217). This process, however, requires one to be of sound mind, suggests Johnson: "Natural law reasoning, then, is the method by which persons gifted with both clear-headed perception and logical analytic ability can reason together about the values that ought to be the basis of law and normative judgments about individual behavior" (218). The implication is that given a relatively healthy mental state, natural law will be self-evident and consensus will logically follow.

Johnson (1987) provides a brief analysis of feminist thinking to show how things can go awry and how natural law can be thwarted. He argues that feminists thought posited that what was best for human flourishing (natural law) was that women should have choice or autonomy over their lives such that they could choose a life path in either work or in the home and not be hampered by obstacles (such as bad marriages) to full social participation. Johnson explains that this backfired because in opening the way to

career life, social economics have changed such that dual incomes are now necessary just to keep up with basic needs. With the relaxing of divorce laws, women can no longer depend on lifelong marriages as both men and women are now easily able to divorce making it much easier for a man to exchange his wife for "his secretary or the intellectually stimulating new associate in his law firm" (222). This is Johnson's attempt to show what results from "faulty reasoning." In other words, that the women's liberation led to perceived social problems indicates that feminist ideals transgress natural law. On this account, feminist thought equates to faulty reasoning.

Within ID discourse, natural law is connected to the social domain by its interpretation within a Christian framework as an element of common sense. In this framework, natural law is revealed in a number of ways: through creation, rational/moral capacities, physical and emotional design, conscience, and consequences (Budziszewski 1997, 180). As one author puts it, natural law is "written on the heart" (Budziszewski 1997, title). ID advocates argue that natural law implies an obvious understanding of how the world is and what is best for human beings. ID advocates claim that the parameters of an objective morality are inscribed into the very biology of human beings such that one cannot *not* know its statutes (Budziszewski 2011). In this view, natural law statutes are taken as universal and ideal.

Natural law, from this perspective, can be challenged by human behavior which can be socially detrimental, and in order to protect society from problematic actions of individuals, political action is necessary. Within the Christian framework, natural law is governed by conscience (Budzisewski 1998). One's design, or "natural" moral strictures are exceeded and one's innate sense of right and wrong becomes fatigued when one

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ignores the "instruction manual for how we're supposed to live" (Robison and Richards 2012, 20). J. Budzisewski (1998) claims that over the course of time, particularly since the advent of Darwinism, people's consciences have been dulled by progressive cultural changes away from the acknowledgement of "the natural law as a true and universal morality" (np).[92] As a result, culture has been degraded and people have become less fearful of natural consequences. Budzisewski warns that unnatural contortions in an attempt to avert natural consequences increases the potency of the unavoidable eventual outcomes. He writes that "the only question now is whether our culture will be able to survive the return stroke of the piston" (1998, np). In the interest of the public good, those committed to this view seek to intervene into public life as an act of benevolence.

To summarize, according to ID advocates, the design and purpose of the natural world entails a natural morality. One writer puts the premises thus: "A) there is inherent functionality in nature, B) this inherent functionality prescribes a moral order, and C) following this moral order is key to flourishing and happiness as human beings" (Holloway 2012, np).[93] Darwinian evolution and its commitment to naturalism are accused of clouding innate abilities of human beings to apprehend nature and so it impedes moral intuitions. The ID movement seeks to undo the influence of evolutionary thought as a means of redressing this perceived decline.

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[92] See here for full article: http://www.discovery.org/a/156. Last accessed June 29, 2014.

[93] This quote comes from a blog entitled "Applied Intelligent Design," and can be found here: http://appliedintelligentdesign.blogspot.ca/2012/08/what-does-bible-mean-by-natural.html. Last accessed June 29, 2014.

6.4 ID and Sexual Politics

Redressing the perceived decline of morality within society, according to ID advocates, involves addressing and countering progressive politics in regards to gender and sexuality. It is necessary now to discuss in more detail the connections between the Christian framework and the sexual politics with which ID advocates engage. There are of course innumerable variations of Christianity and doctrinal orientations, and even among the CR there is undoubtedly any number of doctrinal differences. It is not the objective here to flesh these differences out; rather, the objective is to flesh out a bit more carefully the implications for gender and sexuality within the Christian framework as expressed within the context of ID discourse.

The ID framework posits a social system that is said to be an expression of natural law. I will first outline this framework then survey specific references to sexual politics and discuss some of their implications. The narrative inherent in this framework suggests that the purpose of human beings is to advance the goals of the greater good, and the greater good is best achieved by free-market capitalism, which is in turn best served by the traditional family unit as the primary social-organizing structure. This framework confines sexuality to reproduction through gender essentialism and binds women to reproduction as a primary social function. Feminist scholarship has dealt extensively with the social implications of the ideal family unit, and I will recall a bit of this literature in the discussion. Though it will take some effort to reach, the vantage point offered here reveals the prominence of gender and sexuality to the ID political agenda.

6.4.1 ID Capitalism and the Traditional Family

In the previous chapter, I suggested that the ID tenet of irreducible complexity is a scientized version of the Genesis creation story. This conjunction functions to legitimize and justify a Christian worldview that procures the social-organizing practice of subsuming the individual to the ideals of the collective. In this discourse, conformity is equated to freedom—a key concept throughout this discourse. Establishing the collective orientation as natural and divinely ordained is the foundation for the notion of free-market capitalism that ID advocates assert is dictated by natural law, and this in turn is said to entail a "natural" and "ordained" gender-dimorphic moral order prescribed in the ideal of the traditional family.

In this subsection, I will first discuss the ways in which ID compels the priority of a collective orientation. I will then briefly explain the social-political system that this orientation engenders, according to the ID framework. Next, I will examine the function of the traditional family unit in this system, and this will enable me to show how gender and sexuality are integral elements. Understanding the centrality of gender and sexuality in this system that ID advocates promote will help us to see and better understand more broadly their position on specific issues related to gender and sexuality.

In their book *Intelligent Design: What One Needs to Know* (2008), Dembski and McDowell make these connections between natural law and divine law explicit. They write:

> According to the Christian worldview, God freely created
> the world. The Bible opens with Genesis 1:1: "In the
> beginning God created..." It is no accident that the first thing
> the Bible teaches is creation. Creation implies purpose.

> Because we are created, there is a purpose for our existence,
> for the family, for work, for sex, and for how we ought to
> live. Creation by a loving God is our *origin*. (18 emphasis in
> original).

In this passage, the authors connect design to moral obligations in line with biblical ideals, and as such, it boasts some important implications: it naturalizes, normalizes, and shelters the ideal of a social system of domination and of submission of the individual to the collective. Let me explain.

Ironically, notions of restraint are articulated in the context of freedom. First, that God "freely" created suggests that the laws he instantiated were not constrained by any other force or forces. His laws are thus complete and insulated from external challenge. God's freedom to create suggests that he was not compelled by anything or anyone, he could have done things differently, but he chose the design that he did for the reasons in accordance with his own good will. In this perspective god is God, so one can assume that the apparent purpose of things exist for good reason. The ideal forms of the biological and social world as ID advocates portray them (though I have not yet extrapolated as to what these are) can be understood as the way things are, the way things should be, and are fixed by divine wisdom and sanction.

Natural law, as represented in the above passage, embraces as ideal a structure of subjugation and domination. Domination by God is established in that he is free and not moved by outside forces yet he compels all things that are outside of himself into being or into material states. He has knowledge to create all things and power to move the physical world. Subjugation is created by those subsumed under that natural law of God's creation. Furthermore, not only is natural law a form of guidance in terms of reaping the

consequences of one's actions, but here, human beings are indebted to the creator such that consequences are coupled with personal responsibility.

If we are to understand that human beings are designed with constraints that directly impact function, then the questions that arise are: what is the purpose of human beings, and how does one evaluate functionality? Some ID advocates, such as Discovery Institute fellow Jay Richards, explicitly claim that the purpose of humans is "to glorify God and enjoy him forever" (Robison and Richards 2012, 326 KL). It would take another entire dissertation to fully unpack what this purpose entails, but what one can glean from these texts is that "God" is symbolic of the church or a collective body. In the New Testament the church is often referred to as the body of Christ and Christ as God. Without delving too far into this text, it could easily be ascertained that this phrase compels one to value the collective above oneself (glorifying God) and partake in its benefits. The point to be made here is that the design inference directs the individual to embrace the collective good, or at least to embrace what is asserted as being the collective good. This is significant because it is a primer to accepting the social system that ID advocates propose. This system crucially depends on the conformity of adherents, as we will see.

For many, a key element of the biblical worldview is that, according to Genesis, human beings are made in the image of God (Robison and Richards 2012, 329 KL). This is significant in terms of design because it relegates human beings to the domain of the exceptional in relation to other creatures, and it protects the design features with a cloak of sacredness. In the making of man in his own image, it is implied that God instilled a purpose that designates how one ought to live. This implies that as God was free, so too

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is man. Natural law compels (not forces) certain behaviors thus the notion of freedom, or freewill, is reinforced—one can choose to obey the laws or disregard them (to their own peril). In ID discourse, the belief that man is created in the image of God, translates into a moral order that posits a strict gender dimorphism, which in turn furnishes gender-specific moral obligations, that then furnishes a political position on various social issues. Not only does this view seek to describe the way things are, it also seeks to define the way things ought to be, and one can infer that interference in divine design would be on par with sin, destruction, and perhaps even blasphemy.

Central to the ID movement is a social-political orientation that pulls together faith, family, and free markets into a moral and economic system of which gender and sexuality, as the center of reproduction, are the primary organizing elements. The concept of an intelligently designed free agent is central to this system: "A free society allows us to love, seek, and enjoy God. It frees us to fulfill our God-given purposes as free beings made in the image of God— to love our families and fellow human beings and exercise the virtues required to do that. It lets us be fruitful and multiply, and exercise our dominion as God's stewards over His creation" (Robison and Richards 2012, 328 KL). Within this system, the (heterosexual) family is taken to be the primary social unit from which all exercises of dominion take place. The exercise of dominion is justified by the uniqueness of humanity instantiated by divine paternity. In this framework, ID is utilized to explain and justify free-market capitalism—big business, small government, and faithful workers—the foundation of which is the family. Let me explain.

ID advocates argue that free-market capitalism is the *natural* economic system that best furnishes the needs of human societies thus promotes human flourishing. In

other words, free-market capitalism is a realization of natural law. I will use the term "ID capitalism" to refer to capitalism as described and discussed in ID discourse by ID advocates. The discussions here of capitalism in this discourse is but a sketch of the issue. A full interrogation of the ramifications of this element of the discourse far exceeds the parameters of this project, but the sketch provided here is sufficient for the purpose of identifying the significance of gender and sexuality in this system.

To see the connection of ID capitalism to gender and sexuality requires first an overview of the system as articulated. ID capitalism is said to allow for individuals, motivated by an innate drive to excellence and spurred by competition, to work towards their own ends, and in so doing, they contribute to the overall system. Although the outcomes of such a system are unpredictable, it is a win-win situation because, as Robison and Roberts (2012, 219) explain, even if one is selfishly seeking their own best interests, they must consider the interests of others in order to provide something that will be in demand. Discovery Institute co-founder George Gilder expands on this at length in his book *Knowledge and Power: The Information Theory of Capitalism and How it is Revolutionizing Our World* (2013). Gilder's thesis is that capitalism is a complex system that depends not on supply and demand, but on the injection of new information. What he means is that as entrepreneurs venture into the market they learn, develop, and adapt new ideas that stimulate growth and wealth. At the heart of a healthy economy, says Gilder, are individuals with the ambition and fortitude to seek out new opportunities, try new things, and recycle profits back into the system through investment in new ventures. In this view, the system works well because although it does not provide equality, it provides an abundance of opportunity and rewards hard work.

Gilder (2012) explains that capitalism is a meritocracy that weds knowledge and power in beneficial ways. He writes:

> The key issue in economics is not aligning incentives with some putative public good but aligning knowledge with power. Business investments bring both a financial and an epistemic yield. Capitalism catalytically joins the two. Capitalist economies grow because they award wealth to its creators, who have already proven that they can increase it. The tests of enterprise yield knowledge because business plans are falsifiable; they can be exposed as wrong, as businesses are subject to bankruptcy. Investment outcomes afford both negative and positive feedback loops. Errors Enron and successes Google. Entrepreneurial tests yield power in the form of after-tax profits that can be reinvested without recourse to bureaucratic commissions, congressional committees, boards of experts, charitable trusts, and arrays of political administrators. (xxii)

In this account, what keeps this system in check should not be governments because their systemic approach to oversight and control injects a top-down structure that constrains the creative environment and hampers creative productivity. Rather, what should keep such a system in check or working well (creating wealth), is a well-oiled moral compass. The Discovery Centre's Home page explains the connection like this: "Linking religious, political, and economic liberty, the Judeo-Christian culture has established the rule of law, codified respect for human rights and conceived constitutional democracy. It has engendered development of science and technology, as well as economic creativity and innovation."[94] Gilder explains that capitalism is the ultimate manifestation of human

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[94] See website here: http://www.discovery.org/about.php. Last accessed June 29, 2014.

ingenuity and freedom in that the mind champions the limits of the material world (2012, xiv).

The role of the traditional family unit is the keystone of the ID capitalism. One has to dig back a ways to find an explicit explanation as to why the heterosexual family unit is ideal beyond the fact that it is said to be dictated by God and exemplified in the Bible. The best explanation I could find comes from a frequently cited book in ID material entitled *The War on the Family: A Parent Speaks Out* by William Gairdiner (1992). The ideal of the traditional family is crucial to understanding the priority of gender and sexuality in ID discourse, and though I will try to make this as straightforward as possible, this explanation takes some work to follow.

The basic explanation is related to the means by which a "man" creates value or capital. A man creates value by transforming natural material into something that someone else wants, thus what a man really owns is his labor, skill, ingenuity, or whatever personal efforts were harnessed to transform the raw material into a commodity.[95] The reward for effort is ownership of the product. In this way possessions can said to be extensions of the person (Robison and Richards 2012, 2998 KL). Law and order protect private property and produce social harmony and order. The rule of law ensures that the free exchange of goods can transpire unfettered by things like theft and fraud. Laws protecting private property from the sovereign state are most important because this leaves economic power distributed amongst the people. "The final physical form of this dispersed power is the institution of private property and the laws governing

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[95] Gairdner derives this theory from the work of John Locke, specifically his *Second Treatise of Government* (1690) (See Gairdner 1992, 71-76).

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it" (Gairdner 1992, 73). The only role of government in this system should be to protect life, liberty, and private property.

Within this construct is what Gairdner (1992) calls the bonus system. Everyone benefits from the system, but those who put in more effort are rewarded more (74). This system is said to create the conditions for the good society, and it is said to explain and justify the distribution of material wealth by glorifying the rewards of a strong work ethic.

The role of the family in ID capitalism is to harness the wild man to domesticity, tend to his physical, social, and psychological demands so that he can focus his energies on maximizing his efforts thus maximizing his profits, maximizing his rewards and enhancing the system as a whole. Gairdner straightforwardly notes that the gender division of labor has been the most effective means of developing the natural world and exercising the dominion that, it is said, God has commanded. He writes that "the division of family labor has turned out to be one of the most fruitful devices for wealth creation ever invented" because of the exchange of specialization of knowledge of the sexes and skill afforded by "a voluntary exchange of complementary functions" (80). This author and those that follow explicitly argue for an economic system that allows male participation in the workplace with enough compensation to alleviate the need for women to work outside of the home and "free" to focus her energies on the demands of domestic life.

Gender inequities are accounted for by the so-called intelligent design of the physical world. Biology, in this view, is the intelligent design of the sexes that accounts for this division of specializations in regards to labor. Gender essentialism is explicit:

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> The key difference is that the woman holds in her very
> body a link to the long term future of the race. Her
> sexuality determines her long term goals. As a very
> physiological consciousness, she knows she can bear and
> nurture children. She has a central role in the very
> perpetuation of the species. The man is estranged from this
> process; his sexuality arises merely as a compulsive drive
> to pleasure. It's short term by nature. It's predatory and
> quickly gratified. (Gilder nd, np)[96]

In this construct, women are obliged by biology to reproduce, attend to the reproductive

activities, and to tame the wild and sexually profane masculine beast. Men are obliged to

direct their creative energies toward the capitalist system. It is for this reason that the

traditional family is heralded as natural, moral, and ordained by God.

6.4.2 Survey of Sexual Politics in ID Discourse

Though perhaps not obvious at first glance, gender and sexuality is a primary site

of concern and the impetus of action within ID discourse. At the heart of ID is a concern

with reproduction and the proliferation of the social system which they claim best

nourishes both the individual and society. In the interest of benefiting this system, a

strong concern with gender and sexuality, as the sites of reproduction, is not surprising.

The primacy of reproduction can be ascertained through the relationship between design,

gender, sexuality, and the social-organizing practices that ID proponents champion.

Taken together, these elements compose what many ID advocates deem as a divinely

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[96] See full article here: http://www.acton.org/pub/religion-
liberty/articles/RK%3D0/RS%3DfjbyT.B79EMggmWfSt4IP4HtkN0-?page=46. Last accessed June 29,
2014.

ordained moral order that proceeds from natural (divine) law. With this is mind, there are a number of key issues that get hearing in ID discourse.

In their book *Indivisible: Restoring Faith, Family, and Freedom Before It's Too Late* (2012), Robison and Richards bemoan the infiltration of a naturalistic worldview that has heightened the temptations of the material world and dampened the divine commandment to "be fruitful and multiply, and exercise our dominion as God's stewards over His creation" (330 KL). Citing declining global birthrates, the authors lament the diminishing of the Christian population and declare it as a sign of a loss of hope in the future. This loss of hope, the authors argue, is inspired by a pessimistic environmental prognosis and transition of the idea of children "as a duty and a blessing" to "a drag on your hip lifestyle" (2059 KL). Their message is straightforward: if one wants to contribute in a positive way to society and culture, or benefit the greater good as compelled by the biblical worldview legitimized and justified by ID, according to Dembski and McDowell (2008), one must have lots of kids to carry on the faith and its ideals (134). In this way, gender ideals are transferred from biology to sociological best practices and they are sheltered by divine sanction.

Sexuality in any other context is discarded as unnatural and immoral. Unsurprisingly, ID discourse has an explicitly homophobic element. As an indication of the importance of homosexuality in this context, a search of the Discovery Institute article database returns 61 matches for the word "homosexual," 92 results for "gay," 26 for "lesbian," and 102 for "intelligent design."[97] Sampling these articles shows the coverage of a range of social issues. For example, one article argues for resisting health

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[97] This search was conducted on January 23, 2014.

care coverage policies for gay couples seeking infertility treatment (Smith 2013a).[98]

Another argues that Planned Parenthood is a socially destructive organization because, among other things, it provides sex education that does not condemn homosexuality (Gardiner 2008).[99] Yet another article finds fault with "The Religious Left," because in contrast to the right, it endorses homosexual marriage (Klinghoffer 2006).[100] Another article argues that the military should not include openly homosexual men (Gold 1996).[101] Their position on homosexuality is clear.

According to ID, homosexuality goes against natural law in that it transgresses the constraints of design, but there is a tension in this discourse. In one sense homosexuality is viewed as an alternative lifestyle that is a product of choice and free will (see Klinghoffer 2006, for example). In this view, it would seem that homosexuality is an individual choice and thus it is the responsibility of the individual to *not* choose this path. However, there is also a sense in this discourse that homosexuality is a disease or illness (see Reed 2005, for example). It makes little sense for one to choose to have a disease or be held responsible for its manifestation. Of course, so long as homosexuality is equated with sin, and sin with the need for redemption, it is not so much *having* the illness that is the primary concern; rather the problem is *not seeking* the "cure." Seeking the cure implies subduing one's personal orientation to the dictates of the collective and/or the ID social system.

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[98] The full article can be found here: http://www.discovery.org/a/20981. Last accessed June 29, 2014.

[99] The full article can be found here: http://www.discovery.org/a/7251. Last accessed June 29, 2014.

[100] The full article can be found here: http://www.discovery.org/a/3521. Last accessed June 29, 2014.

[101] The full article can be found here: http://www.discovery.org/a/250. Last accessed June 29, 2014.

In addition to the objection to homosexual relations themselves, ID proponents advocate for the challenging of laws and policies that would prohibit homophobia. For example, one writer questions the integrity of an establishment that limits social objections to specifically religious spheres: "Perhaps bowing to the sensibilities of 'wider society' is the price paid for being an established church—as opposed to a mere 'sect,' ...Evangelical Protestants can oppose homosexuality in their preaching (although saying so in the public square can land one in legal trouble)" (Smith 2012, np).[102] Another author, challenging proposed legislation in the US that would expand hate crimes legislation to cover LGBT peoples, accuses the political left of being "an enemy of academic inquiry, and a practitioner of thought control on a wide variety of issues" including "evolution, global warming, special rights for homosexuals and abstinence education" (Limbaugh 2007, np).[103] These writers are concerned that such policies would outlaw biblical denouncement of people from within the sphere of alternative identities. Such pronouncements are currently justified on the basis of religious freedom.

Along the same line are the more familiar concerns with gay marriage. One way gay marriage is derided is by asserting the unnatural environment of gay marriage for children. Adoption by homosexual couples is labeled as setting a bad example, being an unhealthy environment, and producing morally "iffy" citizens (Pierce 2002).[104] "Even cultures that have taken homosexual acts in stride, such as the ancient Greeks, still knew that marriage was for a man and a woman. No doubt this is why few cultures until

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[102] The full article can be found here: http://www.discovery.org/a/20351. Last accessed June 29, 2014.

[103] The full article can be found here: http://www.discovery.org/a/4034. Last accessed June 29, 2014.

[104] The full article can be found here: http://www.discovery.org/a/1159. Last accessed July 1, 2014.

recently ever had a widespread debate about the nature of marriage. It was obvious,"
writes Richards (2012, np).[105] In this discourse the debate is not about the private lives of
citizens but is about the public acceptance of "alternative lifestyles" (Richards 2012, np).
Same sex marriage is seen to cheapen and mock the sacred status of marriage as it taxes
the "natural" order of things.

It is not just homosexuality itself that ID proponents reject—they insist on the
dimorphic gender structure and the political activity that supports it. One ID fellow
applauds anti-transgender legislation in regards to lavatory use by transgendered
individuals ("Jerry Brown Refuses to Scramble Eggs," The Scrapbook 2013).[106] Others
mock gender ambiguity by challenging and mocking research that shows the potential
harm of enforced genderization via the sex assignment at birth of individuals with
ambiguous genitalia (Smithb 2013).[107] Gender diversity is demonized by equating it to
chaos, disorder and evil (Wiker 2004). Ben Wiker decries "the technical drive to knead
human sexuality like clay—to form men out of women, women out of men with
transgendering surgery...the natural division between male and female has been all but
erased. The ultimate result is not the creation of pure spirits, we note, but non-gendered
sexual demons" (np).[108] The tenacity with which this topic is assailed speaks to the
intensity of the concern with gender and sexuality.

In this context there is no allowance for a distinction between biological sex and
gender. "Our very biology testifies to this. They [an individual's sex organs] can only

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[105] The full article can be found here: http://www.discovery.org/a/18761. Last accessed June 29, 2014.

[106] The full article can be found here: http://www.discovery.org/a/21701. Last accessed June 29, 2014.

[107] The full article can be found here: http://www.discovery.org/a/20941. Last accessed July 2, 2014.

[108] The full article can be found here: http://www.discovery.org/a/2155. Last accessed June 29, 2014.

achieve their primary purpose when joined with another human being of the opposite sex" (Wiker 2004, np). That one could choose their gender is no doubt indeed threatening to the stability of the collective in that it is so highly dependent on bi-gender distinction. Unsurprisingly, gender essentialism is safe-guarded by taboos on the transgression of gender norms. For example, Wiker (2004) writes that "androgyny is the negation of gender, the unraveling denial of the divinely ordained distinction between male and female." Wiker notes that androgyny is often symbolized in Christian media by Satan and this makes sense if one believes that androgyny, or the relinquishing of gender dimorphism, equates to chaos and disorder, the hallmarks of evil.

Although homosexuality seems to be a high priority in this discourse, sexuality in general, save for procreation within heterosexual marriage, is prohibited. Sexual activity outside marriage—the ideal procreative environment in this view—is portrayed as being immoral and dangerous. Ben Wiker (2004) explains that natural law prohibits "adultery, sex before marriage, homosexuality, contraception, incest, masturbation, bestiality, and pornography. These prohibitions are in one way or another a perversion, a turning away, from the fundamental natural sexual distinction" (np). This view engenders a political incentive for fear-based sexual health education and abstinence-only education, an approach that has been shown multiple times to be ineffective (Ott and Santelli 2007).

The promotion by ID advocates of fear-based sexual health education involves the reification of traditional gender ideology. In one article entitled "Touring a quagmire: Public Sex Education," Calvert (2004) compiles a commentary on the state of sexual

education in one US state.[109] The article begins with a list of calamities associated with premarital sex that includes sexually transmitted disease, unwanted pregnancy, and emotional distress. The author is supporting abstinence-only sex education that asserts that the only sure way of avoiding likely, even inevitable, catastrophe is by abstaining from all sexual behavior until marriage. The author does not provide any supporting evidence but assures the reader that infection and mental distress are outrageously high among those engaged in such activities.

Central to this structure is a gendered division of moral obligations and responsibility. Though not an exhaustive overview, these obligations are also apparent, in one way, in sexual health programs endorsed by ID advocates. In Calvert's (2004) article advocating abstinence-only education he argues that educating about contraception actually increases the rate of STDs because it offers a false sense of security in the safety of sexual interactions. The author specifically refers to the use of contraception pills by girls as acting as a license for unrestrained sexual behavior. In this way, the author holds females responsible for making non-marital sex permissible.

In another example, a book entitled *Sex and Character*, of which William Dembski is a co-editor, gender-specific moral obligations are even more pronounced. In this book the advice for avoiding immorality. For males, safety requires avoiding temptation, avoiding expectations, avoiding seduction, and avoiding compelling emotions (Cole, Duran, and Dembski 1998, 58). For a female, however, the onus is on her to avoid becoming the victim of acquaintance rape. She is to avoid risky situations, avoid risky

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[109] This article can be found on a website entitled "Intelligent Design network." The Discovery Institute provides a link to this site on its ID resources page: http://www.intelligentdesign.org/resources.php. Last accessed June 29, 2014.

locations (dark alleys and romantic hideaways), dress appropriately, act appropriately (no teasing), and know the physiological/psychological differences between males and females (Cole, Duran, and Dembski 1998). The directive for the boys is a short four point bullet list, but the directive for the girls is several full length paragraphs. The moral burden to avoid victimization is much greater than the moral burden to not victimize. This book imparts the idea that as per the whim of the designer, boys have less control over their sexual urges than do girls; thus, girls are more responsible for the sexual behavior of themselves than the boys they encounter, and they are in many ways responsible for the boys' sexual responses as well. This message fits well with the premise of the ID capitalism and the traditional family ideal it espouses: it is the female's role to manage the male's sexual appetites within the construct of marriage.

In the sexual health material, the weight of obligatory reproduction is placed on women, and the fear that is accentuated is not so much anti-sex as it is pro-marriage—the prime site of gender relations. The implication is that safety is to be found in the protection of a male and his secured sexual access. The logic of sexuality in this view suggests that one way to avoid victimization is to secure sexual access for men. Gender dimorphism is cited as the natural premise for social-organizing practices—heterosexual marriage. In this view the biological design of human beings creates the distinction between male and female that is enacted via natural law and witnessed by consequences and conscience: "we see that...the male body fits with the female body, that sex outside marriage causes problems, that gluttony leads to obesity, and promiscuity to venereal disease" (Robison and Richards 2012, 20). I have not noticed any dietary guidelines in

the ID discourse, but clearly sexuality requires stringent control as it is asserted as the foundation upon which design is spoken into the social and material worlds.

Within the marital sphere are special designations for males and females as well. An article on the Discovery Institute site about the living wage movement in the US provides some insight to ID friendly gender-roles in marriage. In the article "Socialism in Every City: The spread of the 'living wage'" (2003), the author William Tucker claims that the living wage movement—a progressive political initiative that advocated the legislation requiring employers to pay a minimum wage that would allow workers to earn enough to sustain an average standard of living—is a form of socialism that is destructive to the traditional family structure.[110] The author connects the concept of the living wage, or what we would now consider a minimum-wage policy, to an economic era around the turn of the 20th century that enabled women and children to supplant men in the workforce due to technological aids and advances of machines that negated the need for physical strength and made skilled tradesmen less essential.[111] He asserts that a better plan than the living wage (which he asserts is an unfair strain on employers and stresses the economy) was to restrict who could work where and when: "Rather than adopting minimum wage rules across the board, reformers began by passing eight-hour days and other restrictions for women and children. This both strengthened families and limited the power of factories in hiring women and children to undercut men's wages" (Tucker 2003,

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[110] The full article can be found here: http://www.discovery.org/a/1613. Last accessed June 29, 2014.

[111] The author neglects to mention the impact of two world wars that increased the demand for workers at the same time that men were conscripted into military service and sent abroad to fight. These conditions contributed to the increased demand for industrialization and the lack of men was compensated by the hiring of women. This of course is an oversimplified rendition of this history, but the point to be made is that changes in the labor force was not caused solely by the women's liberation movement, as this author suggests.

np). This course of action, says Tucker, functioned to enforce an informal policy limiting income to one person per family. Tucker writes that "this both provided more time for childrearing and made sure employers didn't use women to cut their husbands' wages" (np).

The system that Tucker is advocating takes the onus off employers to pay their employees a wage on par with average standards of living. Instead, it places it on women by increasing the demands of the workday so that women with children or other caregiving responsibilities, in a practical sense, had to "opt" out of the workforce and settle for economic dependency on their working husbands. Little surprise that this system was challenged. Tucker's article reports that "the system worked well until a married newspaper reporter named Betty Friedan was told in 1950 that she had to leave her job after having her second child. The rest, of course, is history" (np). A clear distinction is made: the role of women is in the home and the role of men is at work, and the home is dependent on the man.

As we have seen, an important theme of this discourse highlights God's commandment to Noah after the flood to "Be fruitful and multiply and fill the land" (Genesis 9:1). For example, Discovery Institute fellow David Klinghoffer (2007) cites numerous biblical passages that command and encourage procreation, and he explains that "in the struggle between rival worldviews...as in war, the number of the soldiers on the ground matters no less than the qualities of the combatants" (np).[112] Like Robinson and Richards (2012), it really comes down to math: the greater the number the greater the dominion.

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[112] This article can be found here: http://www.discovery.org/a/4089. Last accessed June 29, 2014.

Anti-abortion arguments within the ID discourse, though premised on the notions of design and morality, are made within the rhetoric of nationalism and freedom. In the book *Indivisible* (2012), Richards and Robinson explain their anti-abortion stance with reference to the Declaration of Independence: "We are endowed by our Creator with certain unalienable rights… life, liberty, and the pursuit of happiness" (89). Their argument is simple: life is a prerequisite to freedom, it is the government's duty to protect freedom, so abortion, which takes a life, should be outlawed by government (90). This position is augmented with biblical arguments that deem all human life as predestined by God. In this argument, women are held responsible for the entire state of the nation and embryos are considered citizens within the construct of the nation state. Through the imperatives of morally mandated reproduction, upon which the constituency and legal status of its citizens rests, women's sexuality is confiscated by the state—they must give birth to furnish the nation with enough people to protect its freedom.

This subsection, though not an exhaustive list of issues in regards to sexual politics in this discourse, does provide a representative sample. This discourse unambiguously advocates against homosexuality, against abortion, and against transgender rights. It promotes fear-based sexual health education, traditional gender roles, and subsumes all sexuality to compulsory procreation. Natural law, Johnson (1987) explains, draws on first principles that are written into the genetic fiber of human beings, forbids abortion, deems heterosexual marriage sacred, and deems sexuality to be solely for the purpose of reproduction (131-153). It is one thing for a religious group to agree on a set of beliefs and practices, and for some within such a group, this worldview may indeed offer benefits worthy of the constrictions, but it is quite another thing for religious

groups to seek to instantiate such ideals into the public domain. It is now time to consider

some of the greater implications of this discourse.

6.4.3 Discussion of ID Sexual Politics

The sexual politics that ID discourse endorses has some serious social

implications that warrant a deeper look. This discussion will generally focus on ID

capitalism, gender relations and feminism. ID espouses a social order that is not just a

suggestion for best social-organizing practices but is a moral imperative with real

potential impact.

ID capitalism is, at its heart, a system of sexual politics with a rather unbalanced

power distribution. The freedom that is heralded as the crowning glory of this system is

unequally distributed between men and women because, for one reason, as discussed in

the previous section, women are morally obligated to "protect" freedom via procreation.

Recall that in the ID discourse, freedom is guaranteed first by life, which is the moral

mandate of women, thus women are only "free" to the extent that they fulfill this

obligation. This is of course not freedom at all.

Gilder (2012) elaborates on this moral obligation by explaining the significance to

the full social/economic system of ID capitalism. He argues that poverty is overcome by

the creation of wealth. In other words, the creation of wealth produces human flourishing

and social wellness. Furthermore, the creation of wealth is achieved by the power and

creativity of entrepreneurs, and that the power and creativity of entrepreneurs is achieved

by the exercise of freedom guided by moral intuitions (2013, 87). In other words, wealth

is created by ingenuity exercised by individuals in environments where there is an

abundance of possibilities to make choices and do things that will generate creations and inventions beneficial to themselves and society in general. Freedom, the keystone of the system, however, is gendered right from the start because, as we have seen, because the prerequisite of freedom is the creation of life which is the moral domain and obligation of women. To the extent that it is women's primary responsibility to ensure the continuance of life, their freedom is subsumed under the demands of procreation. The entrepreneurial creativity to which ID advocates speak therefore refers primarily to men.

Compulsory heterosexual reproduction is commanded in this system, and the implications thereof are potentially more severe than it may first appear. Poverty is associated with a state of (almost) inevitable death, or, in other words, a hampering of ID capitalism (as ID capitalism first requires life). According to the proponents of ID capitalism, poverty is not really a matter of income and cannot really be judged by North American standards, a point Jay Richards makes repeatedly.[113] Real or absolute poverty, says Richards (Robinson and Richards 2012), is when "your body is using your muscle for fuel, you have a disease that would be cured with a multivitamin or a three-dollar antibiotic, you're barefoot, sleeping in a lean-to, and have worn the same long T-shirt for a year" (3924 KL). Visions of poverty are typically derived from images of women and children in developing countries, severely malnourished and lacking basic needs.[114] Poverty, which is essentially defined as being on the brink of death, is alleviated by the

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[113] One subsection of the Discovery Institute entitled The Center on Wealth, Poverty, and Morality where they publish an online Journal entitled *Wealth & Poverty Review.* The center staff includes senior fellows George Gilder and Jay Richards. Richards' views on poverty are clearly explained in the video "10 Tough Steps to End Poverty" which is posted on the site. The full video can be seen here: http://www.wealthandpoverty.net/2014/04/how-to-end-poverty-in-ten-tough-steps.php. Last accessed May 15, 2014.

[114] This type of imagery is described in Robison and Richards (2012), and in the "10 Tough Steps to End Poverty" video mentioned in Footnote 116.

creation of wealth, says this constituency, and capitalism is the "natural" system for the

creation of wealth. On this view, capitalism, then, is the Way of Life.

This Way of Life, however, traps women. To the extent that poverty is understood

as leading toward death, capitalism is understood as leading toward life. Recall that ID

advocates claim that freedom is an inalienable right that should be protected by the state,

but in order to have freedom, one must first be born, therefore, they argue, the

government, in protecting freedom, should prohibit abortion thus mandating life. In other

words, life requires capitalism, capitalism requires freedom, and freedom requires life. It

is a circle of necessity that snares women at the very center.

Furthermore, the vision of poverty that ID advocates claim as the true vision of

poverty erases the experiences of those living in poverty in North America and other

developed areas. ID advocates argue that North American standards are too high, thus it

is asserted that only a very few actually suffer real or absolute poverty. Writers on this

topic recruit research and statistics reports to support their claims. The following is an

excerpt from such a publication that articulates the "real" picture of poverty in North

America:

> In 2005, the typical poor household, as defined by the
> government, had air conditioning and a car. For
> entertainment, the household had two color televisions,
> cable or satellite TV, a DVD player, and a VCR. In the
> kitchen, it had a refrigerator, an oven and stove, and a
> microwave. Other household conveniences included a
> clothes washer, clothes dryer, ceiling fans, a cordless
> phone, and a coffee maker. The family was able to obtain
> medical care when needed. Their home was not
> overcrowded and was in good repair. By its own report, the
> family was not hungry and had sufficient funds during the

This discourse does not deny that women account for a good majority of the lower

income levels and lower standards of living, and the demographics are typically included

in the research, but they do deny that the disparity is anything significant or is even really

important. Such a position flies in the face of the mountains research on poverty from an

array of perspectives almost too numerous to count.[116]

Yet another reason that ID capitalism is more problematic than it may first appear

is that poverty is constructed as justified systemic discrimination. Generally speaking,

poverty, it is said, "is not so much an economic problem as an economic symptom of

moral and social problems" (Robison and Richards 2012, 3010 KL). The moral and

social problems to which they refer are, generally speaking again, are related to the status

of women particularly in relation to traditional family structure. Gilder (1994) explains

that the welfare programs have made single motherhood more lucrative than traditional

family life.[117] The result of liberal divorce laws and liberal sexuality has led to a welfare

state that has opened the floodgates of moral decay by undermining the necessity of

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[115] This article is published by The Heritage Foundation who frequently co-sponsor ID events with the Discovery Institute and where Discovery Institute Fellow Jay Richards was a visiting Fellow (http://www.discovery.org/p/9). See here: http://www.evolutionnews.org/2009/06/stephen_meyer_launches_signatu022001.html and http://www.discovery.org/e/176 for examples), and where Discovery. Last accessed July 2, 2014.

[116] There are numerous research groups on poverty in Canada that provide a great deal of information and analysis on a wide range of issues related to poverty. Some of the more prominent areas of research currently focus on determinants of health and the working poor—those in full and part-time positions but whose income is below what is necessary for an average standard of living. The following is a sample of such groups: http://www.povnet.org/research-analysis, http://www.canadiansocialresearch.net/poverty.htm, https://www.policyalternatives.ca/. Last accessed July 2, 2014.

[117] Gilder's points are succinctly put in this undated online interview: http://www.acton.org/pub/religion-liberty/volume-4-number-2/freedom-welfare-dependency. Last accessed July 2, 2014.

marriage, the necessity of men, and producing a population of illegitimate children, says Gilder (1994, np). Thus economic discrepancies result from derelict moral duty. In other words, if you are poor, it is your own fault because you are "free" to make different choices and do and behave differently. Gilder (1994) says that "what the poor really need is morals" (np).

As we have seen however, this "freedom" is gendered. ID capitalism holds women responsible not only for their own individual situation but for the state of men as well. Poverty in North America, to the extent that it can be considered such given the definition provided by Richards, is associated with the demise of the family. Easy divorce and liberal sexuality, it is claimed, is encouraged and rewarded by the welfare system that takes money from industrious workers and gives it to the idle and immoral (mostly women and children to whom freedom does not really apply). This state is destructive to men too, according to Gilder (2012) because it makes available a network of women amenable to the sexual wiles of men without extracting the co-requisite commitments to future obligations. Gilder (2012) writes that "to live well and escape poverty they [the poor] will have to keep their families together at all costs and will have to work harder than the classes above them. In order to succeed, the poor need most of all the spur of their poverty" (166). This is justified systemic discrimination at its finest.

The real victims of family breakdown are men, says Gilder. With the loss of validation of masculinity that comes from familial identification, and free from the burden and blessings of family life, "they find manhood in the macho circles of the street and the bar or in the irresponsible fathering of random progeny" (Gilder 2012, 162). This state of affairs degrades not just individuals, but society at large by creating gangs of

violent men that disrupt the peace and hamper business, it is said. Once again, the underlying logic is that to avoid violence and victimization, sexual access must be secured. This logic is not unlike suggesting that one can avoid rape by being willing to have sex. Women are held responsible not only for their own economic state but the state of men and the nation as well.

Although women are charged with the responsibility of managing sexuality and reproduction, their domain in ID discourse suggests that these areas should actually be governed by men. Like Gilder, Ben Wiker (2004) is concerned with what he explains under the heading "The Real Darkness," as the rejection of human nature that he ascribes to advances in reproductive technology that has threatened the need for men. According to Wiker, new reproductive technology has allowed women to "avoid the matrimonial necessity of a male through in-vitro fertilization" (np). Wiker continues that the negation of maleness equates to the end of all moral distinctions, and he advocates a reinstating of the distinct male and female binary in order to shore up the institution of marriage, the "natural" site of reproduction and the "natural" extension of biological design. It is thus not surprising to see an entire segment of the Discovery Institute dedicated to bioethics, under the heading of "Human Exceptionalism."[118] In this segment are numerous articles denouncing new reproductive technologies and delineating what should be the boundaries of healthcare policy. Most telling, perhaps, is that in this segment of the website, under the "essential readings" link, is a list of books and articles that are, exclusively, key ID theoretical texts.

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[118] See here: http://www.discovery.org/che/. Last accessed July 2, 2014.

Feminist scholarship has for some time now addressed the inequities of the traditional marriage structure, particularly as rooted in the biblical Genesis narrative (Ingersoll 2003). The gender narrative of Genesis places women in the role of helpmate to a male counterpart and saddles her with the primary toil of reproduction. Though the scope of reproductive activities assigned to women in Genesis is not explicit, it has been developed throughout the Judeo-Christian tradition and remains well-articulated in contemporary evangelical Christian contexts. In practice, however, strict variations of gender structure are not always obvious or stable (Ingersoll 2003). Evangelical Christianity, consistent with ID discourse, posits that women's nature compels them to be caregivers and homemakers and the primary source of reproductive labor.[119] Gender relations in this context appear to be a common sense manifestation of design and not a product of human social construction thus not amenable to social will.

Feminist analysis of such perspectives has been extensive, and there is no need for me to redo all that work here, nor is it possible for me to provide a comprehensive review of the literature in this regards at this point. It does seem, however, that foundational feminist critiques of the traditional family have fallen from mainstream memory, and so I will settle for a reminder of these critiques with a brief reference to a few classic feminist texts.

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[119] I want to clarify here that for humans, only women get pregnant and give birth (currently, though reproductive technology is beginning to offer options to men), and so it is a lot more laborious than the male reproductive role, in this regard. While it doesn't follow that therefore women have to be caregivers and/or homemakers or that specific gender roles need apply, it seems obvious that they have different experiences in reproduction from the point of view of producing a baby. What happens after birth is definitely not essential. Contemporary domestic arrangements often involve a variety of ways of dividing reproductive labor.

In 1963 Betty Friedan published *The Feminine Mystique*, a foundational text in what has since been labelled the second wave of feminism and that is referenced with disdain at regular intervals throughout ID materials. I have already discussed one reference in the previous section, but Friedan's book is also cited in one Discovery Institute article as one book (of several) that "screwed up the world" (Gage 2008, np).[120] In this text, Friedan sought to address what she referred to as "the problem that has no name" (15). The problem that Friedan was articulating was characterized by a commercial glorification of domestic femininity, a lowering of the age of marriage along with an increase of the rates of marriage and births, but a rising tide of dissatisfaction, isolation, and desperation all in various degrees of severity and manifesting an assortment of psychological illnesses and addictions. The prevailing view was that ultimate fulfillment was to be found in becoming a good wife and mother, yet, women were groaning under the weight of subsuming the self to what was everywhere declared to be the greater good. "It is easy to see the concrete details that trap the suburban housewife, the continual demands on her time. But the chains that bind her in her trap are chains in her own mind and spirit. They are chains made up of mistaken ideas and misinterpreted facts, of incomplete truths and unreal choices. They are not easily seen and not easily shaken off" (31). Friedan goes on to explore and unpack the links in these chains by examining the ways in which patriarchal ideology commands norms that subsume women to the free-market world of social, emotional, and economic subjugation. Friedan tabled the reality that many women wanted more than a husband, a home, and children:

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[120] This article can be found here: http://www.discovery.org/a/6861. Last accessed June 23, 2014.

they wanted an identity in their own right, not an identity entirely derived from the services they provide (32).

The problem that Friedan flags has been developed and challenged and re-developed again throughout the course of feminist scholarship, but what tends to form the basis of a very generic consensus is that Western societies are historically rooted in patterns of male dominance that structure social institutions and practices in ways that instantiate and sustain the power of men. In Kathleen Gough's *The Origin of the Family* (1971), for example, she explains that the concept of the traditional family involves several typical characteristics of male power. These characteristics include: denying women's sexuality or forcing it on them; confining or reducing women's mobility; using women as legal tender in male to male transactions; hampering women's creativity; withholding cultural knowledge and preventing the attainment of personal goals (Rich 1980).

The ID movement pulls together a wide-ranging vision that seeks to direct the world in inequitable gender-specific ways. The extensive focus on sexuality as solely a matter of reproduction denies all other forms and expressions of sensuality, emotions, and inter-human connections. Andrienne Rich (1980) uses the concept of "compulsory heterosexuality" to refer to the myriad of ways in which male power is reinforced by familiar tropes such as the rampant uncontrollable male sexual prowess, fairytale romance in art and media, dangers of women being alone, beauty of passivity, and dangers of all extra-heterosexual-marital activity. Rich writes that the extensive measures to control sexuality, including taboos against homosexuality, have functioned "as a means of assuring male right of physical, economic, and emotional access [to women]"

(644). That ID proponents tie faith, family, and free-markets into a single system purported to be intelligently designed at the physical, social, and economic level amounts to a full-scale net of domination poised to ensnare its adherents.

That feminism and feminist theory is well equipped and rehearsed at addressing and facing such fronts makes it a threat to ID and the system that it promotes. It is therefore not too surprising to see a strong anti-feminist sentiment, and a notable anti-feminist history in this discourse.

The rebranding and the coalescence of ID is, as we have seen, a product of the legal battles in the US, but as a political movement it is also closely related to the formation of the CR in the 1980s. The emergence of the CR was largely a bid to arrest what they perceived to be a declining morality and to counter the dramatic changes ushered in via feminist and other social activist initiatives (Herman 1997; Cohen 2012). ID, ideally, would be free from the constitutional impediments associated with creation science because it was purportedly stripped of all religions reference. And as such, it was and is an important element for the CR.

A redress of feminist advances is both implicit and explicit in the establishment of the ID movement and resonates with the patriarchal discontent with feminism in earlier eras. During the sixties and seventies, a sexual revolution was sweeping across the Western world. This revolution was an era in which, as one scholar puts it, "ongoing de-stigmatization of all varieties of non-marital sexual activity, accompanied by a sharp rise in sexual activity" (Eberstadt 2012, 12). Whatever tools Fundamentalists were using to combat changing ideals in gender and sexuality were apparently largely ineffective in

those decades as the sexual revolution introduced progressive sexual politics despite deep resistance from many religious (among other) groups.

In her book *Delirium: How the Sexual Counterrevolution Is Polarizing America* (2012) Nancy Cohen carefully constructs the history of the rise of the CR in the US in what she terms as the "counter sexual revolution." The advent of the Pill was a major player in this drama as it intervened on behalf of women whose compliance to civil law was managed to a great extent by "natural" law. For women, sex before marriage entailed the risk of unwanted pregnancy. The options were generally not great: illegal (and likely unsafe) abortion, single motherhood, forced marriage, or forced adoption (9). The impact of reliable birth control was immense: "It may be possible to imagine the Pill being invented without the sexual revolution that followed, but imaging the sexual revolution without the Pill and other modern contraceptives simply cannot be done" (Ebestadt 2010, 12). Without control of one's fertility, coupled with the threat of life-altering social sanctions, women's sexuality had been largely under the dictates of patriarchal authority.

The Pill was an intervention that relaxed the social grip of gender hierarchy and challenged the "natural" hierarchy. The result was a dramatic change in the economic status of women and in the political landscape, particularly in areas such as divorce, custody, and property laws. The legal system was aiding and abetting a progressive social climate for women, and as Cohen writes, that "in a desperate effort to stop cultural change in its tracks, the critics of the new sexual order accused the sexual revolutionaries of destroying the traditional American family," this despite the fact that the iconic American family was a short-lived narrative, mostly fictional and had disintegrated decades earlier in the realities of the post-war economic upheaval (Cohen 2012, 13).

In many ways, the invention of oral contraception meant that women need not be subsumed to biological fate, and it opened up a new world for women. The impact of this change was seen as a boon for many in that it freed women from biological obligations and allowed them to pursue personal and professional interests outside of the home, it freed men from being charged with the primary responsibility for women and their children, and it allowed for smaller families which afforded greater emotional and material resources to be allotted to the children (Eberstadt 2012). Yet for others, including many from the Fundamentalist camp, the advent of reliable contraception represented a great bane.

Birth control seemed to sever sexuality from reproduction and this separation was seen by some as having a very negative social impact. Sex without penalty, or so it was claimed, engendered serious social consequences such as an increase in divorce, ill-cared for children, degrading of the arts and in increase in mental illness (Eberstadt 2012, 13). Much of the discourse in this regards focused on the relationship between sexual freedom, the role of women, and the demise of the family.

Response to the changes in gender roles and the sexual revolution has been strong. Susan Faludi (1991) describes the response in terms of a backlash that manifested in the propagation of myths throughout various cultural streams including media, religions, and academics. These myths connected women's emancipation to cultural decline, an affront on the family, and to an increase in women's own personal and professional dissatisfaction and distress (ix). This backlash, says Faludi, is not caused "simply by a bedrock of misogyny but by the specific efforts of contemporary women to improve their status, efforts that have been interpreted time and time again by men—

especially men grappling with real threats to their economic and social well-being on other fronts—as spelling their own masculine doom" (xix). This is precisely the concern posed by Wiker (2004) in his assertion that new reproductive technologies are negating the necessity of men thus causing severe moral decay throughout society. Though not an organized conspiracy, yet in some ways more viral and potent, Faludi traces these myths through some common themes of the demise of society due to a lack of men, lack of fertility, lack of new marriages, easy access to divorce, abortion, and childcare (Faludi 1991). With women free to pursue their own interests, and with the increasing opportunities for women to support themselves, the fear was that men were becoming less and less necessary. That these themes were instrumental in resistance to feminist advances is convincing, but it was certainly not only men involved in the process.

A strong faction of antifeminist sentiments was propagated by women. At the same time that feminists were making political strides throughout the 60s and 70s, a number of grassroots anti-feminist women's groups were forming and becoming politically active. For some women, the sexual revolution opened the door to new and welcomed ways of participating in social life, but for others, it represented a threat to their understood function and purpose hence their security in their social communities was undermined (Steuter 1992, 291). Antifeminist women's groups often brandished the idea that feminists degraded the prestige of the woman's role as nurturer, caretaker and imparter of morality within the home. For these women, and for the men threatened by women's emancipation, joining together to oppose feminism was a sensible idea.

Though incredibly oversimplified, the gender coalition just suggested was the general idea behind the rise of the Moral Majority in the mid-eighties, a CR

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conglomeration of believers motivated to interject a Christian worldview into the general culture to stave off what they saw as the impending doom of progressive politics (Faludi 1991, Cohen 2012). The CR specifically advocated for participation in public politics by linking such participation to evangelical objectives and hence divine imperative.

It is thus also not surprising to see that ID initiators are motivated, both personally and politically, by antifeminist ideals. George Gilder, co-founder of the Discovery Institute, the cradle and hub the ID movement, for example, has made something of a career out of antifeminism. Gilder is well-published, most notably in the area of technology and economics, and his work appears regularly in well-read publications such as *Forbes* and the *Economist*. The early years of Gilder's career were largely focused on battling feminist initiatives. Gilder, for example, wrote against proposed daycare programs arguing that mothers are the best natural caregivers of their own offspring and that the state would impose uninterested and impersonal standards on families and child-rearing (Gilder 1989, 161). Two of his more notorious publications include *Sexual Suicide* (1973, later released as *Men and Marriage* in 1986) and *Wealth and Poverty* (1981/2012). The former book describes women as the moral anchors naturally designed, through the institution of marriage, to tame the masculine wilds, neutralize men's sexual predatory nature, and foster their servile function as household leaders and breadwinners. These are ideas that have been re-articulated, nuanced, and expounded on in ID discourse, a sampling of which we have already seen. The latter book denies the validity of poverty as a result of anything other than one's lack of moral motivation and Christian orientation. With these books and other writings, Gilder intentionally fostered his identity as "American's Number One Antifeminist" (Faludi 1991, 285).

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Gilder saw the feminist movement as a project that sought to emasculate society, leaving men frustrated, alone, and lacking social purpose (Faludi 1991). At the heart of Gilder's social commentary is a gender essentialist ideology that makes ID a natural companion thesis. In a much more recent interview, Gilder makes this very connection in his explanation of his entrance into the ID movement. In an interview (Blum 2007), Gilder was asked "What do the relations between men and women, supply-side economics, microchips and intelligent design have in common?" He responded:

> I believe that the universe is hierarchical, with creation at the top — the idea that there's a creator and that we, at our best, act in his image. This top-down model is what all of my work has in common. I sensed that the basic flaw and failure of feminism was its gradient toward pure animal passion with no procreative purpose. In economics, I believed that it was the supply that created the demand. In my examination of computers and telecom, and subsequently biology, I saw the same thing. That's really how I came into the intelligent design movement — through the recognition of this same structure that I'd previously examined in sexuality and economics, information theory, computer science and network theory. (np)[121]

Gilder explains that this common structure entails a moral orientation that if ignored leads to destruction. In spreading the structural net to cover gender and the economy, the implication of Gilder's position is that not only are they biologically predetermined but they are divinely sanctioned as well.

Philip E. Johnson, author of primary ID texts *Darwin on Trial* (1991) and *Reason in the Balance* (1995) provides another example that the proposal and promotion of ID is

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[121] The full interview can be found here: http://www.jpost.com/Features/One-on-One-Faith-in-hierarchy. Last accessed July 2, 2014.

motivated by an antifeminist agenda. Johnson is cited in "The Wedge Document" as the foundational articulator of ID. In Johnson's personal testimony, he attributes his turn towards ID to a personal crisis that resulted when Johnson's wife decided to end their marriage after ten years. According to Johnson, his wife was seduced by feminism, and although he had fulfilled his obligations as father, husband, and provider, seduction of liberation won over the bonds of marital bliss (Powell 2005). Johnson was devastated, and via a providential sequence of events, he encountered the idea that the God of the Bible offered the best solace and principles upon which to evaluate the circumstances in which he found himself. "Johnson found Christ" (Powell 2005, np).[122]

Johnson's body of work is more extensive than the books just listed, but these works provide the foundation of the connection between ID and antifeminist ideas. In *Reason in the Balance: The Case Against Naturalism in Science Law & Education* (1995), Johnson elaborates in greater detail the problems and implications of Darwinist thought on popular culture and social thought. Johnson bemoans the development of the modernist perspective that he attributes to methodological naturalism told through stories of the Enlightenment rationalists and feminists (32). He argues that the death of God in the general population renders Genesis impotent as the arbitrator of moral order and leads to moral decline. Moral decline, according to Johnson, is manifest in the increase of abortions, divorce, and homosexuality. Johnson's rejection of evolutionary theory is coupled with a concerted effort to inspire moral renewal by undoing progressive politics and restoring natural law (149).

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[122] The full article can be found here: http://www.arn.org/docs/johnson/washingtonpost0505.htm. Last accessed July 2, 2014.

Though there are more players involved in the initiation of the ID movement than Gilder and Johnson, their backgrounds hold a particular resonance with the political atmosphere in the late eighties and early nineties, the time the ID movement was taking shape. At that time, as Cohen writes, "Protestant fundamentalists, orthodox Catholics, and Mormons might disagree vehemently about...the fine points of theology, such as how literally to read the Bible... Yet their shared beliefs in women's subordinate role in the traditional family and the horrors of sexual liberation allowed them to look beyond their past hostilities to unite in sexual counterrevolution" (58). Feminism, in the same way as evolution, provided a powerful means of unification—a common foe. The antifeminist strains of Johnson and Gilder provide a nuanced flavor of the sentiments involved in the bid to motivate social change through the ID movement.
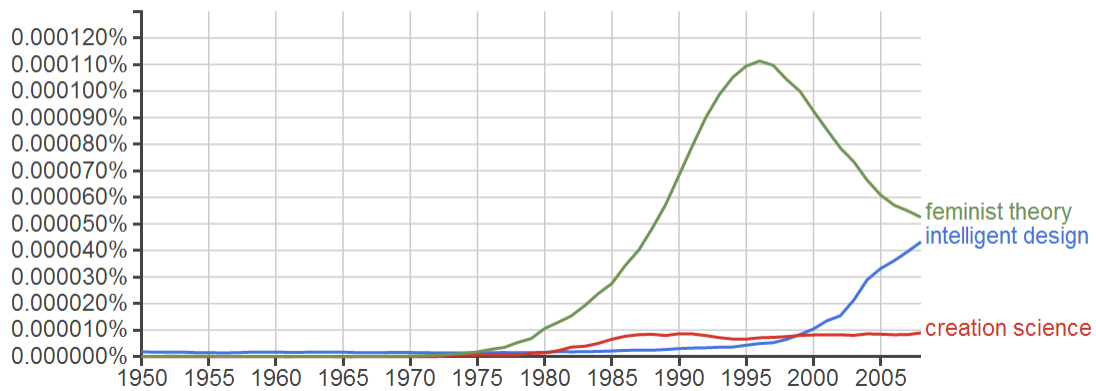

Figure 6: Ngram Chart for "feminist theory" and "intelligent design." This ngram chart gives an indication of the negative correlation between feminist theory and intelligent design.

ID ideology, a key element of the CR, warrants its own anti-feminist backlash because it is particularly problematic for women. The full effectiveness of ID at combating feminist progress has not yet been studied at length, but the Google's ngram viewer shows an inverted relationship between the rise of ID discourse and a decline of

feminist theory (See Figure 6).[123] This relationship should inspire further investigation into the previous suggestion that ID was, to some significant extent, formulated with a conscious antifeminist agenda and has perhaps been relatively effective. While sexuality encompasses multiple genders, and the ID stance against homosexuality is very prevalent, women are unequally implicated. The values associated with gender dimorphism still ascribe greater value to men and masculinity. Women are prescribed to be under submission in a number of ways, in accordance with biblical social hierarchy, and they are expected to fill traditional gender roles in terms of care-giving and other tasks of domesticity. The concern of ID advocates with reproductive technology and the "natural law" of gender and sexuality translates into a bid to yoke women and reproduction into the rhetoric of motherhood, wifehood, caregiving, and various roles of service and support to the patriarchal heritage asserting its power and privilege in the present. It appears that ID is resting its political platform largely on the backs of women to rally the collective. ID is not really about science at all, but it is a conceptual framework utilized to motivate beliefs and actions in regards to policing gender and sexuality.

6.5 Conclusion

Contests over gender and sexual politics are nothing new, and there are many important reasons for groups to seek to control and manage them. The point of this project is not simply to seek to outlaw what many may see as justified political coercions.

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[123] Recall from Chapter 3 that the ngram viewer searches a corpus of more than four million books for the occurrence of words and phrases. Again, this is not a rigorous research project on its own in this dissertation, but it lends support to the idea that the historical relationship between ID and feminism warrants further inquiry.

The point is to expose the underbelly of the ID movement and shift the focus from the decoy of science onto what is really at the heart of the movement—reproduction, in terms of ideology, biology, and the economy.

ID is not really, and maybe has never really been, about science. The antievolution methodology of ID was forged against the threats to biblical and church authority at a time when social-organizing practices where being challenged and changed in a myriad of ways and from a myriad of reasons including science, economics, and changing gender roles. ID capitalized on this antievolution methodology by utilizing evolution as a focal point upon which a conglomeration of Christian proponents could converge in attack, and in this way, a conceptual collective could be formed and mobilized.

Once the distracting drone of science is cancelled, the gender and sexual politics in this discourse is relatively easy to identify. ID discourse argues that human nature is a products of the intelligent designer who has programmed human beings with a moral compass. So long as people follow this compass, this theory posits, both individuals and society will flourish.

Embodied in this theory is a social order of domination—of the Earth and of some human beings by other human beings. Part and parcel of this concept of flourishing is the assertion of a system of domination that critically rests on adherence to traditional gender roles and the confining of sexuality to the function of reproduction. With this is mind, it makes perfect sense that a concern with gender and sexuality figures so prominently in this discourse. Controlling sexuality is and has been a key means of exercising social control. In the case of ID, this control is much more subtle than in many other cases

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because it is hidden in the guise of a more noble supposedly less political concern with science.

ID discourse works in the manner that advocates ascribe to the intelligent agent itself. Creation is understood as a product of divine utterance or divine logos, and in a similar way, the instantiation of gender and sexuality ideology of this discourse into public action equates to a bid to impose the mind (read: thought, intelligence, ideology, conceptual realm) over the physical or material and/or social world. Just as the tenet of irreducible complexity purports, the instantiation of ID ideology is not a matter of the coming together of individual free-agents or the self-organization of various components of the living world; rather, it is the a carefully and intentionally constructed framework that needs to be energized by the infusion of ignorance and authority in order to make it "run." In the final chapter I return again to the role of the CR in Canada in order to suggest that the CR transacts in this discourse, and as such, warrants further investigation. It is not my objective to stamp out this perspective, but to continually identify and create spaces in which this ideology loses strength and the Other has room to breathe.

CHAPTER 7 ID IN CANADA

7.1 Introduction

In the introduction of this dissertation, I identified the connection between the Christian-right (CR) and ID in the Canadian context. In this chapter, I want take up that connection again to suggest a path for further inquiry in light of the work done in this project. Literature on antievolutionism in Canada is small, and given the potential political implications of ID and the potential political influence of those who utilize this framework, it seems that more work is necessary.

The objective of this chapter is to set the stage for future work. In Section 7.2 I provide a brief overview of antievolutionism in the Canadian context. In Section 7.3 I discuss some of the ways ID has infiltrated education in Canada, and in Section 7.4 I identify a number of ways in which ID-Christian activism is unfolding in Canada. Each of these sections suggest a direction for future endeavors.

7.2 Antievolutionism in Canada

In Chapter Three of this dissertation, I examined the historical roots of ID. For the most part, the story of antievolutionism has been discussed within a US context; however, antievolutionism also took root in Britain and Canada among other countries. In this section, I want to very briefly address this history in order to give a broader picture of this history and identify some of the elements that are particular to the Canadian context. Literature in regards to the history of antievolutionism in Canada is woefully small, and as such, it seems to me that this is an important site for further inquiry.

In Chapter Three, I discussed two sites of antievolutionism: Britain and the US. The British movement differed from the US in that there was a greater degree of biblical accommodation of evolutionary theory resulting in various forms of theological evolution. Theological evolution is the notion that the Divine ordained the evolutionary laws of nature which then unfolded throughout evolutionary history (mostly undirected or rather directed by internal laws unfused at creation) (Bannister 1979; Webb 2002; Bowler 2001; Larson 2006; McCalla 2013). Canada, though influenced by both perspectives on evolution, was much more aligned with the US movement that maintained a more literal reading of biblical creationism (though there were various interpretations thereof in circulation). Communication of antievolutionist ideas was transmitted through a network of evangelical Christian communities that spanned the US/Canada border (Bannister 1979; McCalla 2013; Numbers 2006). There is a distinction to be made here, however.

What demarcates antievolutionism between Canada and the US is the focus on legal reforms of education policy in the US as a means of substantiating biblical creationist friendly "scientific" accounts of the world. From the Scopes Trial in 1925 to the Dover Trial in 2005, and in numerous legal contests in between, legitimizing creationism via inserting it in the public education system has been a top priority of antievolutionists. The majority of antievolution discourse in the US deals with the church-state distinction enacted in the Establishment Clause of the First Amendment to the US Constitution. This element of the discourse is significant because it demarcates the individuality of the two countries: the Establishment Clause is distinctly American thus could not provide an obvious universality as a basis for cross-border unity, even if it

did provide inspiration and influence for the ideas and activities of advocates in a Canadian context.

Antievolutionism in the two countries differs in other important ways. The difference between the two is rooted in Canada's CR constituency and Canadian identity. Thus far, antievolutionists in Canada have had less (less obvious at least) political impact than their US counterparts (Barker 2004). While the same types of arguments made in the US were also made in Canada, the scope of political activism has been significantly less (Barker 2004). Explanations are twofold: first, Canada does not have the same history of self-identification as a Christian nation; multiculturalism has been its self-proclaimed hallmark, and antievolutionism has been promoted primarily by more or less culturally homogenous Evangelical Christians (Barker 2004). Secondly, what antievolutionist activity that has taken place in Canada has been significantly smaller in scope, garnered limited media/public attention, and was portrayed as an American spill-over—Canadians have a history of consciously distinguishing themselves from their American counterparts (Barker 2004).

The lack of attention to creation-evolution controversies in Canada is undoubtedly connected to lack of a Christian national identity which underlies the CR movement in the US (Bean, Gonzalez, and Kaufman 2008), and the simple fact that Canada has lacked the critical mass necessary to carry out the political agenda of the CR in Canada (Barker 2004). Canada has a track record of ignoring the whole controversy by leaving evolution out of the education curriculum altogether (Wiles 2006a; Bean, Gonzalez, and Kaufman 2008). So while antievolutionists in Canada and the US share the much the same doctrinal positions, how these have been translated into public actions has been different.

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This is an area that requires greater attention as the distinctions between antievolutionism in the US and Canada seem to be diminishing. I have noted in the introduction of this dissertation that there appears to be a rise in Canadian Christian nationalism, and so it is not surprising to see increased attention in Canada being paid to creation-evolution controversies. This rise might be accounted for, in part at least, by the emphasis of ID advocates and CR activists on the family or "family values" given the familial ideals that ID legitimates and justifies. The focus on family is much more generic than the focus on education in earlier antievolution activism, as education involves laws and policies specific to individual regions. The gender-dimorphic heterosexual family is said to be pre-political, natural, the way the world is, and thus it provides a very strong basis for a more global antievolution coalition. The Establishment Clause matters less when focus is shifted to from the perceived bumpy world of policy and politics to the firm foundation of biological essentialism.

7.3 ID and Education in Canada

Though the notion of family provides a broader platform for cross-border cooperation than education, ID has made some inroads in Canadian education. The most significant advances of ID in Canadian education have not been through legal contests however. The advances have been more subtle.

One way has been through the rise of private religious schools. Most provinces do partially fund independent religious schools, but typically they are required to meet provincial curriculum standards (Anon. 2009). Many of the evangelical Christian schools in Canada, however, supplement public school curriculum with ID materials, and/or have

adopted a correspondence-type curriculum that teaches Intelligent Design, creationism, and antievolutionism explicitly (Bayefsky and Walsman 2007, 565).[124] Public funding for private religious schools that supplement curriculum with what many deem "bad science" warrants public debate.

Another way in which ID has infiltrated education in Canada has been through homeschooling. Canada has seen a dramatic increase of homeschooling over the past decades (Davies and Aurini 2003; Emms 2008), which is likely connected the influence of the CR. The matter is complicated, however, by the fact that parents who choose a homeschooling option do so for numerous reasons, which may or may not be related to religious beliefs (Arai 2000). That being said, there is good evidence to suggest that homeschooling is an option broadly supported and encouraged by CR organizations in Canada, and religion is the most cited reason for homeschooling (Emms 2008). Many Canadian homeschooling associations routinely offer and recommend ID and other creationist texts as part of the science curriculum.[125] This is an area that is greatly understudied at the moment, but suggests a strong ID influence.

Discourse surrounding ID and education in both the US and Canadian contexts tends to focus on the impact of what the scientific community deems "bad science," and on the quality of science education, but I do not agree that this is the site of the most significant implications. ID may indeed be understood as bad science, but the most

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[124] Accelerated Christian Education is an example of a popular correspondence program used in these schools. Sample contents of this program are available on their website at http://www.acecanada.net/. Last accessed June 30, 2014.

[125] Examples can be found here: http://hems-ns.ca/canadian-distributors-2/, and http://www.ywamvancouver.org/resources/home_schooling.html. Also see: http://www.cbc.ca/news/canada/calgary/alberta-homeschool-convention-offers-creationist-textbooks-1.2608338.

apparent educational dearth it espouses is in the domain of sexual health education. The CR, grounded by ID ideology as we have seen in the previous chapter, promotes fear-based sexual health education that involves the denial of contemporary, accurate sexual health information. Education concerning sexual diversity and sexuality is compromised by the restrictive and regressive sexual politics that the CR endorses and promotes, such as is visible in the anti-transgender ad discussed in Chapter One (see Figure 1). Such neglect does not simply represent a lack of available data in regards to the mechanics of reproduction; it elides some much broader and significant issues involving gender identity, sexual orientation, self-esteem (particularly for those who fall outside of the conscripted gender roles/norms asserted in the gender ideology of ID), desire, sensuality, and the full spectrum of sexuality that is essential to overall health and wellness. Surely a more in-depth look at the impact of ID on sexual health education is warranted.

7.4 CR/ID Activism in Canada

In this section I want to highlight some specific sites of CR activism in the Canadian context. It is important to keep in mind that ID is a crucial element of the CR worldview. To this end, I will first provide a brief and simplified recap the connection.

ID fuses scientific and biblical authority such that the Genesis account of creation and its implications are legitimized and naturalized. The story of Genesis says that males and females were designed in precise and distinct ways, and each gender entails a moral orientation specific to its function. These orientations constitute the traditional familial model of a heterosexual couple with children, which is said to be derived from the biblical story. This narrative, believed to be a fundamental product of the authoritative

word of God, is extended as justification and legitimization of the overarching social-economic-moral order that binds faith, family, and free-markets into one ideological social framework.

Furthermore, the CR is animated by a belief in the imminent return of Christ to Earth that will result in the demise of non-believers.[126] This belief involves the obligation of witnessing, or promoting God, to the world through personal and political activity. As one author writes: "In every generation it is our duty to confront the God-denying ideologies of our age with Christian construals of the evidences of science and the arguments of philosophy" (Harlow 2008, 164).

ID is not just one element of belief among others within the worldview of the CR. ID is a form of legitimization in that it functions to anchor biblical text to material reality. CR organizations routinely cite the validity of the Bible as the foundation of their faith, and as one defender puts it, simply: "Any belief that undermines, belittles, or weakens the Bible doctrine of creation thereby undermines, belittles, or weakens faith in the existence and nature of God and the Bible as God's word" (Pratte 2010, np).[127] Dembski (1998b) asserts that through ID one can garner evidence of God's interaction with the world. He exhorts theologians to make clear the ways in which the designer is best understood as the "God of Scripture" (18). To this end, a very brief overview of three leading CR organizations in Canada is provided. These organizations provide a clear example of ID praxis.

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[126] This is a very simplistic rehearsal of this doctrine, but it captures the basic idea that this belief compels evangelistic efforts to procure the salvation of non-believers.

[127] The full article can be found here: http://creationrevolution.com/the-bible-doctrine-of-creationhow-essential-is-it-to-the-faith-of-a-christian/. Last accessed June 30, 2014.

Focus on the Family (FOF) is a leading CR organization established in the US with a Canadian headquarters in Langley, British Columbia. Its primary mission is "to spread the Gospel of Jesus Christ" (Focus on the Family's Foundational Values). Pro-intelligent design articles regularly appear in *Citizen*, its key and widely-circulated outreach magazine and in its broadcast media. FOF has partnered with the Discovery Institute on the production and dissemination of ID materials such as *Unlocking the Mystery of Life* (2002), a sophisticated video production that explains the key elements of ID. FOF, as discussed in 6.2, initiated The Truth Project with the intention of promoting and reinforcing a Christian worldview, and ID is an integral element of this project. Their commitment to the preeminence of design is reflected in the statement of faith posted on their website. Along with asserting that the Bible is true and infallible, their statement says: "Focus on the Family is a reflection of what we believe to be the recommendations of the Creator Himself, who ordained the family and gave it His blessing."[128] FOF is renowned for a number of activist causes such as the promotion of homeschooling, anti-abortion advocacy, and campaigns against same-sex marriage.

The Evangelical Fellowship of Canada (EFC) is another prominent member of the CR in Canada. It endorses an unwavering commitment to biblical authority and a commitment to traditional family values. Pro-intelligent design articles punctuate its key serial publication, *Faith Today*, and its online resource library *Christianity*. EFC is focused mainly on social issues and policy such as strengthening anti-prostitution laws and lobbying for policy against abortion and gay rights (Warner 2010). The EFC has been cited has having a particularly strong influence in federal politics as it is the

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[128] See here for the full statement: http://www.focusonthefamily.com/about_us/guiding-principles.aspx. Last accessed June 30, 2014.

umbrella organization for the home church of Canadian prime minister Stephen Harper among a number of other Canadian MPs (Simpson 2012).

One of the more notorious CR figures in Canada is Charles McVety, president of Canadian Christian College, the home of the Center for Canadian Values. McVety has at times been likened to notorious US evangelical leaders such as Pat Robertson or Jerry Falwell, as he often appears on mainstream public media wielding outspoken condemnation for a broad spectrum of what he believes to be anti-Christian activities (McDonald 2010). McVety is a prominent ID proponent and has been instrumental in promoting ID in Canada. Recall that in 2008, for example, he led a national promotion of *Expelled: No Intelligence Allowed* (2008) that included a viewing on Parliament Hill for MPs (McDonald 2010). McVety and his organization loudly oppose homosexuality, sexual diversity, and promote conformity to traditional gender roles (McDonald 2010, Warner 2010).

The equation of liberal sexual activity with extreme danger has shaped political action of the CR in Canada in regards to delivering sexual health education, and lends support to the suggestion in the previous section that sexual health education, not science education, is potentially the most at-risk aspect of education. The CR utilizes the concept of parental rights to attempt to sway public policy as in the case of the implementation of Bill 44 in Alberta in 2009. The concept of parental rights suggests that parents have the right to govern what their children learn. Bill 44 altered the Alberta Human Rights act to require teachers to notify parents in advance of teaching material related to religion or sexuality and allow parents to withdraw their children from class when that material is

being covered.[129] Significantly, it seems to me, this bill originally allowed parents to withdraw their children from class when *evolution and/or sexual health* was going to be taught. The bill was subsequently altered such that the teaching of evolution is not optional, but the teaching of sexual health education still is. CR organizations hail this bill as a success for the advancement of Christian ideals and seek to utilize the Alberta case as an exemplar for other provinces (EFC 2010).[130]

FOF websites encourage parents to approach sexual health education in the gendered and fear-based way discussed in 6.3. They inform parents that: "masturbation should not play a major role in your son's life, either as a source of relentless guilt or as a frequent and persistent habit that may displace healthy sexual relations in the future" (Focus on the Family 2013, np).[131] The equation of sexuality with shame and harm is clear. In other articles, FOF equates it directly with sin.[132]

The CR espouses gender-specific moral obligations in the promotion of traditional gender roles. The FOF Foundation Values webpage states that "we believe that God created humans in His image, intentionally male and female, each bringing unique and complementary qualities to sexuality and relationships. Sexuality is a glorious gift from God to be offered back to Him either in marriage for procreation, union and mutual

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[129] This story can be found on the CBC News website: http://www.cbc.ca/news/canada/calgary/evolution-classes-optional-under-proposed-alberta-law-1.783950. The follow-up story can be found here: http://www.cbc.ca/news/canada/calgary/proposed-alberta-law-doesn-t-make-evolution-classes-optional-minister-1.783947.

[130] See here for the EFC article: http://files.efc-canada.net/si/Education/AlternativeApproachestoPublicEducation2010.pdf. Last accessed June 24, 2014.

[131] See here for full article: http://www.focusonthefamily.ca/parenting/school-age/preparing-your-son-for-adolescence. Last accessed June 24, 2014.

[132] See here for full article: http://www.focusonthefamily.ca/clergycare/articles/tackling.sexual.sin.html. Last accessed June 24, 2014.

delight, or in celibacy for undivided devotion to Christ" (Focus on the Family 2009).[133] In step with its perspective, FOF delivers gender-specific marital advice. Men, for example, should be attuned to the emotional turmoil women are prone to, should not take sexual rejection as personal rejection, and should continue sexual pursuit with loving and romantic gestures and helping around the house (Fledhan, J. 2007). Women should strive to love their husbands, but above all, they should never waiver in their honor and respect, and in order to affirm their husband's physical attractiveness they should occasionally make the first move (Feldhan, S. 2007).

Anti-abortion activism has been and remains a primary focus of the CR. In Canada, the anti-abortion momentum was set back by a number of legal rulings in the 1980s that were seen to ensure unrestricted access to abortion services (Wagner 2012). In the minds of many Canadians, the abortion debate is closed, but for the CR, such is not the case. In the fall of 2012 federal MP Stephen Woodworth introduced a motion in the Parliament of Canada calling for a study of when life begins (Payton 2012). As written in their media release, "the EFC fully supports the recent calls of Members of Parliament Stephen Woodworth (Kitchener –Centre, CPC) and Jeff Watson (Essex, CPC) for a full examination of Canada's laws in this regard" (Hiemstra 2012, np).[134] Behind this motion was a bid to legally establish a fetus as a human being, thus afford it "equal worth and dignity" in regards to its inherent rights. The ultimate aim of such motions is to re-open the abortion debate and revisit previous legal decisions that protect a woman's right to reproductive health services. Pro-choice activists rebut that the rights of a woman take

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[133] See here for the full article: http://www.focusonthefamily.com/about_us/guiding-principles.aspx. Last accessed June 24, 2014.
[134] See here for EFC article: http://www.evangelicalfellowship.ca/page.aspx?pid=7710. Last accessed June 24, 2014.

precedence over that of a fetus. Although this bill was not successful, CR antiabortion activism continues to push the public debate and challenge public policy (McDonald 2010).

Anti-homosexual activism has taken a distinct turn in Canadian politics. While CR advocates for family values continue to protest against same-sex marriage, their anti-homosexual stance is notably strident in its rebuttal of numerous anti-bullying laws that are being implemented across the country. There has been an increase in awareness of the dangers of bullying, particularly bullying in relation to sexuality and sexual orientation, following a rash of teen suicides that were widely covered by national media.[135] In response, numerous provinces and several federal initiatives have sought to implement legislation that would specifically define acts of bullying more explicitly and provide authorities with more guidance in regards to dealing with such behaviors.

In response to the Accepting Schools Act, a piece of anti-bullying legislation in Ontario, the EFC took issue with, among other things, the portion of the act that compels school boards to support students who seek to organize to raise awareness and understanding of people of all sexual orientations (Coggins 2012, np).[136] This act specifically indicates that school boards support gay-straight alliance clubs (Coggins 2012, np). The EFC suggests that "the remedy for bullying in schools in not gay-straight alliance clubs, but rather proper character formation"—a task for parents, churches, and schools.[137] Bills such as this, the EFC and other CR proponents say, infringe on religious

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[135] A sample of this media can be found here: http://www.huffingtonpost.ca/news/gay-teen-suicide/.

[136] This article can be found here: http://canadianchristianity.com/parents-feel-bullied-antibullying-law-3709/. Last accessed June 30, 2014.

[137] This article can be found here: http://www.evangelicalfellowship.ca/page.aspx?pid=7717. Last accessed June 30, 2014.

freedom because they force teachers and schools to accept ideals and beliefs that are contrary to their religious convictions—namely that homosexuality is a sin and contrary to biblical family values.

The foregoing is just a small sampling of the political activity of the CR in Canada. Such activism does not involve any significant degree of evidence-based policy initiatives; rather, it involves ideologically driven pursuits tailored to garner control over the physical and social world through what is perhaps one of the oldest means—the governance of gender and sexuality.

7.5 Conclusion

This chapter is meant to identify some of the political activity related to sexual politics in Canada supported by an ID conceptual framework. This framework is based, however, on epistemologies of ignorance as it ignores the diversity of lived experiences throughout a wide range of dynamic understandings and expressions of genders and sexualities. The objective of this project has not been to hamper religious freedom or discredit personal beliefs; rather, it has been to bring attention to a train of thought that seems to be gathering momentum.

Each of the areas discussed in this chapter could serve as research projects in their own right. My project has dealt primarily with discourse, and does not address the reality of this discourse in individual lives and experiences. One might likely (perhaps "hopefully" would be a better word) find that within the domain of those who espouse ID, the full dimension of its implications are not fully articulated in the minds of many, and many would reject the constrictive sexual politics that it implies.

CHAPTER 8 SUMMARY AND CONCLUSIONS

8.1 Introduction

In this project I have endeavored to look at ID in a new way. Typically, the concern of researchers engaged with ID has been with the truth claims that ID advocates make about the origins of the world and its implications for science education. In such discussions, however, a major element of ID tends to be missed: the truth claims about origins are largely truth claims about the nature of gender and sexuality, and ID discourse functions to legitimate and justify constrictive and regressive sexual politics. In this project, I have striven to show that ID is not really about science at all. It is about creating, hierarchically structuring, and populating an epistemic space through epistemologies of ignorance with the objective of leveraging the political power of the collective it creates to instantiate ideological constraints into the public domain. ID claims are less about how the world is and more about how the world ought to be.

This chapter has several aims. The first is to provide a summary of this project, and the second is to comment on some of the limitations of this project relevant to future work. Finally, I want to comment on the pragmatics of addressing this topic in the context of contemporary culture. As I have said repeatedly, this project has focused mainly on discourse, but its political implications warrant a more careful study in the empirical realm of lived experience.

8.2 Project Summary

The key objective of this project has been to show that ID is about sexual politics, not science. With this objective in mind, I have not been primarily concerned with

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assessing the scientific truth claims of ID; rather, I have been concerned with showing

that ID entrepreneurs are not really engaged in the business of scientific truth claims at

all. In other words, I have been more concerned with the function of ID. The majority of

research concerning ID, however, has focused on its validity and has deemed it to be

scientifically untenable. As a result, disciplinary domains have, understandably, erected

barriers to exclude ID from academic credibility, but in so doing, they have also created

impediments to examining ID in other ways. For this reason, I have turned to an

interdisciplinary approach as a means of navigating around disciplinary constrictions.

In this project, I have utilized a strategic interdisciplinary approach. This

approach has involved the selection of a variety of different disciplinary lenses in order to

explore this topic in a wide-ranging manner. This approach has not only provided a wide

scope for investigation, it has provided the added bonus of stepping outside of the typical

polemical structure in which the issue of origins is generally situated. Drawing on the

uptake of complexity theory in interdisciplinary studies literature, I have conceived of

this project in terms of complexity theory with various levels of investigation, and I have

positioned myself as part of the complex system whereby the insights offered are best

understood as emergent properties of the epistemic wandering and scavenging of

resources useful for addressing this issue. I have taken up an eclectic mix of academic

tools as necessary to help me articulate ideas and insights in manageable ways.

This project has been divided into three phases. The first phase of this project

focused on showing that ID is not really about science. I have shown this in one way by

establishing its continuance with previous antievolutionism and Christian

Fundamentalism. I have structured this phase by questioning why antievolutionism

persists with such vigor in the face of mounting evidence for evolution, and I have suggested that part of the answer lies in the development and refinement of what I call an "antievolution methodology." This methodology draws on critiques of evolution from early reviewers of Darwin's work and asserts that evolution is speculation, involves unsound scientific methodology, and is lacking in empirical evidence. These critiques also include arguments that evolution is too materialistic, and as such, it rules supernatural explanations out by definition. I have shown that this antievolution methodology is seeded in the Darwinian era, germinates in the antievolution movements of the early 20th century, and comes into full bloom in the late 20th century as ID.

The antievolution methodology involves some significant epistemic practices. It instantiates a detachment of scientific critique from the scientific community at large. These critiques can then be utilized in a rhetorical fashion, not in an engagement of a knowledge-seeking enterprise. To capitalize on the rhetorical power of evolutionary critique, antievolution methodology involves the collecting of highly educated participants (typically not biologists, but this is not always the case) who present their dissent from evolution in highly technical language and forms. In this methodology, science is used symbolically as a boost to epistemic authority. ID embodies this methodology in that it looks very scientific, though quite detached from science as practiced in conventional ways.

In making the argument that ID is not about science, even though ID materials look very scientific, I have queried the function of science in this discourse. In this vein, I have explored ID materials and I have shown that science is utilized as a tool of influence and persuasion with several specific functions: as a source of ideas about how to

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challenge evolution; as an authoritative support for ID claims; and as a defense mechanism. As a source of ideas, ID advocates draw on outdated arguments from the Darwinian era that they repackage in a contemporary scientific context. To the extent that, in the public mind, science is seen to call on an objective realm of knowledge, science is utilized to lend authoritative support to ID claims. As a defense mechanism, ID advocates construct a scientific "Other" and position themselves as subject to the discriminatory practice of "Science." This use of science exercises the sympathies of the audience and potentially dampens rational engagement with the ideas and assumptions of the ID theory itself.

After focusing on what ID is not, the second phase of this project turned to what ID is. In this phase, I have revisited key ID tenets to show that that ID entails a Christian framework in a stronger but more subtle way than its creation science forerunners. This is to say that the key ID tenets—irreducible complexity and specified complexity—can be seen to be a translation of the Christian doctrines of the Genesis creation narrative and the Logos theology of John's gospel into scientific language. I have drawn on a religious studies framework to suggest that ID is best understood as a "thing" deemed special through the construction of taboos and prohibitions against evolution.

In this process, I have also drawn on an academic framework referred to as "epistemologies of ignorance." In this framework, ignorance is understood as *not* a mere lack of knowledge but a constructive practice(s) conducive for building and maintaining relationships that espouse an inequitable dispersion of political power and authority. I have discussed several types of ignorance visible in ID discourse.

Informational ignorance refers to the blocking or marginalization of otherwise available information. This type of ignorance is used to create the epistemic space by the positing of an ahistorical creation narrative, positioning ID in opposition to evolution, and discarding and discrediting expert knowledge of the history of the becoming of the natural world. This oppositional construct creates an epistemic space by reducing the becoming of the world to only two exclusive options: evolution or creation. The ID audience is thus compelled to choose one side or the other, but the choice is weighted in favor of ID by the discrediting of the empirical evidence for evolution and the scientists involved in such work.

In this project I have discussed two other types of ignorance in ID discourse. Systemic ignorance is enacted by the assertion of the creation narrative that substitutes mystery-as-knowledge for knowledge. In so doing, ID proponents hierarchically structure this space by molding mystery with science pageantry thus establishing themselves as privy to sacred knowledge and above their general audience. I have also discussed collective ignorance which is utilized in this discourse to attract adherents. This type of ignorance creates a collective by manufacturing a set of starting beliefs about the dangers of evolution and by exploiting the uncertainty associated with evolutionary processes. Ignorance is also enacted by exploiting fear of vulnerability and by creating cognitive and emotional confusion that dissuades rational deliberation and advocates certainty over discovery. In these ways, the epistemological framework of ID creates a cohesive Christian collective. It is cohesive to the extent that those sympathetic to an ID perspective inhabit a single epistemic space. This space is antievolution.

With the drone of science throughout ID discourse neutralized, I have been able to move into the third phase of this project: examining the connections between ID and the sexual politics of its discourse. I utilized a sociology lens to show that ID legitimizes and justifies a biblical worldview that is a pillar of the CR. I was then able to show that within this worldview, ID advocates utilize a basic version of natural law to suggest that human beings are designed in a divinely sanctioned way. I have discussed their argument that when humans transgress design constraints, suffering, both social and individual, will follow. Furthermore, I have discussed how ID advocates translate the design narrative into the realm of human nature and social-organizing practices by positing a full system that ties together family, faith, and free-market economy. This system is purported to be intelligently designed such that it best enables human flourishing. This system is based on the ideal of traditional family unit as its primary structure, and I have explained that it is the assertion of the ideal traditional family structure that is the fulcrum of sexual politics in this discourse.

In this phase, I have drawn on a feminist lens to examine the ID claim that human beings are designed as naturally male or female for the purpose of reproduction and serving "God" (read: the collective) in the context of the traditional family unit. I have challenged this claim by surveying a variety of issues related to gender and sexuality in this discourse, and I have highlighted numerous problematic implications. I have shown that the sexual politics of ID discourse proclaim compulsory reproductive heterosexuality which includes normative anti-abortion and anti-homosexuality stances, the assertion of traditional gender roles, and the assertion of a moral order that subsumes women under men and the state. I have shown that this system is built on the concept of freedom, but

this freedom is largely restricted to men as women are said to be morally obligated to tend to the details of reproduction, and therefore it is the men who, generally, have the leeway to fully participate in the social-economic system that ID advocates propose.

With the insights that have emerged in this work, I suggest that ID is best understood as a conceptual framework for motivating collective beliefs and action in regards to policing gender and sexuality with the objective of redressing progressive sexual politics that do not support its social/religious ideals associated political agenda. I have thus concluded this project with a sketch of ID in Canada with the objective of setting the stage for future research.

8.3 Limitations and Considerations

The sexual politics of ID discourse are strong and involve strategic gender inequities. This discourse subsumes all sexuality to reproduction within heterosexual marriage and unequally yokes women to biology. For these reasons, it seems to me that the topic of contemporary antievolutionism requires a more thorough and sustained investigation than is presently available. Although my project contributes to this area of knowledge, there are some limitations and considerations relevant to future work.

The strategic interdisciplinary approach that I have employed in this project has been very helpful for assembling a big picture, but it does not easily accommodate a specialized view at any one site. For example, if one was to work from an exclusively historical perspective, it would be possible to revisit a greater number of primary sources and include some, as of yet, unexplored ones as well. In the overview that I have constructed in Chapter Three, I have relied primarily on the historical narrative that is

already in circulation, but with more time and a concentrated historical focus, one might find that this narrative could and should be revised. There is very little inclusion of the writing of women who reviewed Darwin's theory during the era of its publication, for example, and although I have shown connections between contemporary antievolutionism and feminism, there is a question as to the nature of the relationship(s) between early antievolutionism and the women's movement happening around the same time. A more specialized research project would be necessary to address this and similar topics and contribute to our understanding of antievolutionism a contemporary context.

In the title and throughout this dissertation I have used the term "sexual politics," but in a very elementary way. I have focused on the power-relationships visible in ID depictions and assertions of gender and sexuality. I have done this because the task of accessing these politics through the veneer of science under which ID sits was itself arduous. Furthermore, it seems that elementary feminist perspectives have faded in the contemporary realm in which we find ID, and so re-invigorating these perspectives has been a reasonable first step.

Feminist scholarship, among other academic domains, however, purports a much more nuanced understanding of sexual politics than what is represented in this project. Kate Millet articulated a foundational theory of sexual politics in 1969 in which she establishes "politics" as referring to the "power-structured relationships, arrangements whereby one group of persons is controlled by another" (751 KL), and she identifies "sex" as "a status category with political implications" (755 KL) in and specific to "well-defined and coherent groups: races, castes, classes, and sexes" (762 KL). Since Millet's work, feminist theory has fleshed out in great detail the ways in which people are

intersectionally situated such that lived experiences incorporate political pressure from multiple social groupings and identities. There are significantly different political pressures for a wealthy white woman in an urban setting than for a poor aboriginal girl in a rural setting. The fact that both persons may identify as female or "woman" might be an entirely insignificant point of commonality. Early feminist theory has been strongly criticized for not taking intersectionality into account, and this criticism rightly applies to my project as well. For this reason, ID discourse *must* be examined further in greater detail as it has serious implications in regards to racism, classism, and any other axes of differentiation and oppression. My work in this project must only be a starting venture.

As I have repeatedly indicated, this project has focused on discourse, and not on the beliefs and practices of individuals. There are indications of a much greater diversity of perspectives and approaches to regressive sexual politics among evangelical Christians than what is represented in ID discourse. For example, in 2012, Timothy Kurek published a book entitled *The Cross in the Closet* after living with a gay identity for a year. As an evangelical Christian deeply involved in his religious community, Kurek explored and challenged ideas and attitudes about homosexuality amongst fellow believers. His work, not surprisingly, has been met with much debate and controversy, which speaks to the dynamic nature of this issue.[138] Such dynamism, even if never settled in any concrete way, at least destabilizes ID ideology and opens space for critique. For this reason, it seems to me that ethnographical work in relation to ID is important work that needs to be done.

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[138] One example of the coverage of Kurek's work can be found here: http://www.huffingtonpost.com/timothy-kurek/. Last accessed July 10, 2014.

8.4 Some Pragmatics and Conclusions

Creation-evolution controversies have been around for a very long time and I have no doubt that they will persist long into the future. It is not and has not been my aim to seek resolution to such controversies, and in fact, I do not see or even hope for common ground. As I have stated in the introduction of this dissertation, my work is motivated by the paradoxical ideal of moving forward given the impasse.

With this in mind, this project has sought to better understand the contours of this impasse. Though I find the ID perspective disagreeable, to say the least, the positions and ideals it purports make sense within its Christian framework. This framework is valuable and important to many while to many others it is restrictive and oppressive. My ambitions have been much more modest than seeking resolution: I have sought to look beyond the level of controversy and challenge how the ID framework is perceived and understood in order address some of the implications of its uptake in public policy issues.

ID must be understood as primarily a political movement. As such, it cannot be adequately addressed only by assessing the validity of its epistemic claims. Adequately examining ID, it seems to me, requires careful and continuous critical analysis and open dialogue at the interface of science, religion, and public policy.

I am not a scientist, and although the origins of human beings and questions pertaining to meaning and purpose matter, they are not my primary concern. My primary concern is sexual equality, sexual diversity, and progressive sexual politics in general. Ideally, within our cultural and political spheres there will always be space for dissent and diversity, and my hope is that this project, in some small way, will make a contribution to this end.

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APPENDIX A

During the course of this project, I conducted an informal analysis of the types of peer-reviewed article about ID. To do this, I search "Intelligent Design" in two databases: Academic Search Primer and ProQuest. Once I had these results, I eliminated all the duplicates and read through the abstracts to ascertain the general focus of the article. I group articles with a similar focus and found that there were basically five academic areas represented. This search was conducted in 2013. I do not intend this as a rigorous research project, only a glimpse at the distribution of academic areas in which ID is discusses. Furthermore, there appears to be a strong overlap between the articles from Law and Philosophy, and they both tend to deal with arguments as to the scientific nature of ID and the intersection of Church and State. The results are as follows:

Science	18
Science Education	32
Philosophy	55
Religion	21
Law	12
Other (Editorials and other commentaries)	5