THE HUMAN CONSCIENCE:
DIVINE DESIGN OR THE NATURE OF OUR NEURONS?

BY
CHARLES ST-ONGE

A MINI-THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR ENTRANCE INTO
THE DEGREE OF DOCTOR OF PHILOSOPHY PROGRAMME

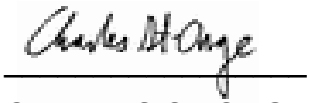
at the
SOUTH AFRICAN THEOLOGICAL SEMINARY

in
DECEMBER 2014

SUPERVISOR: DR. MARK PRETORIUS

DECLARATION

I hereby acknowledge that the work contained in this thesis is my own original work and has not previously in its entirety or in part been submitted to any academic institution for degree purpose.



CHARLES ST-ONGE

ACKNOWLEDGEMENTS

I would like to sincerely thank the following for the role they played in the completion of this mini-thesis.

First, my wife Deborah and my children Olivia and Sophia, for giving me the time to complete this work and for inspiring some of the ideas therein.

Second, the people of Memorial Lutheran Church, my parents Denis and Betty St-Onge, and my aunt and uncle Cheryl and Peter Englert for helping fund this work.

Third, all those who have and continue to support my work as a missionary for The Lutheran Church – Missouri Synod.

Fourth, to Dr. Mark Pretorius for his helpful comments and encouragement throughout the writing of the thesis.

Most importantly, I thank the Lord for giving me the time and talent to be able to be able to worship Him in this way, and for continuing to teach me patience and humility.

TABLE OF CONTENTS

ABBREVIATIONS

ESV	English Standard Version translation of the Hebrew and Christian Scriptures

Chapter 1: Introduction

1.1 Background

Christians through the centuries have long turned to Romans 2:14-16 to show that the human conscience is a sign of the restraints God has placed on sin within all fallen human beings. The universal presence of the human conscience is put forward by many apologists as evidence for the existence of a creator God.[1] In recent decades, however, some scientists have proposed naturalistic causes for the existence of a common human morality. This has been put forward as evidence against the existence of a supreme deity or deities. There is no reason to suppose that the human inclination to do good and avoid evil is anything other than a survival mechanism, the result of millions of years of evolutionary processes. To suggest that the source of the 'law within our hearts' is a supreme law giver is repugnant to new atheists such as Sam Harris and Richard Dawkins.[2] Are these neurological explanations sufficient to explain the existence of the human moral compass apart from a moral law-giver who exists outside of creation? Is this evidence open to other possible interpretations? Might the interpretation of the data or even the data itself be flawed?

1.2 The Main Problem

How might Christians, with their centuries-long Scriptural understanding of human conscience, respond apologetically to the claim that human conscience can be explained neurologically as a result of the brain's Neodarwinian evolutionary development? This is the main problem to be addressed in the following work.

1.3 The Sub-Problems

The main research problem can be subdivided into the following research questions which, taken together, should answer the main problem. Each of these sub-problems will be addressed using a chronological framework. Consideration will be given to how these

1 Many popular Christian apologists use an argument from morality as an important basis for their apologetics. Consider, for example, Chamberlain (1996), Koukl (2012), or the debate between William Lane Craig and Sam Harris in 2011 under the title 'Is the Foundation of Morality Natural or Supernatural' (Craig 2011) just to name three.

2 Richards (2000) argues, from a philosophical perspective, that morals need not be traced back to a divine law giver for them to have something akin to objective force, as do de Lazari-Radek and Singer (2012).

sub-problems were answered in the past, the current state of thinking, and the paths which future research seems likely to take.

The first set of sub-problems has to do with the Christian theological understanding of conscience and natural law. First, consideration will be given to the Romans 2:14-16 passage, a key portion of Scripture dealing with the question of the human conscience, where it comes from and how it functions. Second, how has Christian thought through the centuries regarded the origin and operation of the human conscience? The answer to this question will be limited in scope, but will touch on the major themes on the subject of natural law and conscience in historical Christian tradition and in the major confessional systems of thought present today. This would include, especially, natural law and conscience in the early church writers, as well as in the Thomistic, Lutheran and Calvinist traditions. The roots of Christian's ideas of conscience in earlier Greek and Roman thought will also be considered.

The second set of questions has to do with the current neurological explanations for the human conscience. First, what are the basic assumptions of the Darwinian and now Neo-Darwinian evolutionary hypothesis, especially as those assumptions relate to the development and function of the human mind?[3] As in the examination of the development of Christian thought on the question of conscience, the scope of work on this question will be limited to the general themes necessary for this mini-thesis. Second, what specific explanations have been proposed, and are currently being proposed, for the human conscience based on these Neo-Darwinian assumptions?

The last set of questions has to do with analysing and synthesizing the data gathered in answer to the previous questions in order to address the main thesis problem. First, what are the foremost apologetic concerns to be addressed when considering the Christian theological view on the origin of conscience in light of the Neo-Darwinian proposals for the emergence of the human moral compass? Each perspective will be evaluated and critiqued. Second, are there areas where both the Christian and Neo-Darwinian ideas show convergence and others where they show divergence? Third, considering the questions of foremost apologetic concern, and any convergence or divergence of ideas,

3 Darwinism, strictly speaking, is the hypothesis that the diversity of life on earth is the result of organisms more fit for survival reproducing with greater frequency than those less fit. Neo-Darwinism incorporates genetics into Darwin's hypothesis, specifying that nature is selecting genes more suited for survival. Darwin himself did not specify the source of variation between forms of life which would privilege one organism over another.

what might be the most appropriate Christian apologetic response?

1.4 Hypothesis

The Christian theological view of conscience, based on the Scriptures, is not radically opposed to the Neo-Darwinian understanding of how the conscience functions, although both views differ on the origin, importance, and ultimate foundation for conscientious thought.

1.5 Problem Elucidation

1.5.1 Delimitations of the Research

This research will be delimited, in the first place, by considering chiefly the main Christian theological positions regarding conscience and natural law. The development of these positions will be traced through time, considering the view of major theological figures in their most well-known writings. Second, it will be delimited by focusing chiefly on theories put forward by proponents of the Neo-Darwinian hypothesis for life's development. Work being done in the area of neurology by those who hold a different view of the origin of life, or are agnostic on the subject, will be considered tangentially when useful for providing a contrasting scientific opinion.

1.5.2 Definition of Terms

For the purpose of this study, orthodox Christian theologians are considered to be those prior to 325 AD widely considered to be within the tradition of orthodox Christian thought, and those after 325 AD who accept the tenets of the Nicene Creed. The conscience, or the human moral compass, is the near-universal human ability to distinguish between what is and what ought to be. It is also the near-universal human desire for fairness and justice, however those terms may vary slightly between individuals and groups. Naturalism is the concept that the observable universe is all that truly exists. Positivism is the assertion that all knowledge can be derived through observation and scientific experimentation.[4] Neurology is the study of the function of the brain.

4 'Positivism is not a definite doctrine which can be assigned to any particular epoch of philosophy, but a certain attitude towards science and theory' (Rahner 1975:1255). It is the antithesis of metaphysics, 'the mistaken and illusory attempt to investigate and know reality using non-empirical methods' (Marsonet 2002).

1.6 Preliminary Literature Review

1.6.1 The Conscience in Theological Perspective

That all humans have an inborn sense of right and wrong apart from any special revelation is assumed throughout the Scriptures. In the dialogue between Cain and the Lord recorded in Genesis 4:6-7, God implies a need from Cain to make a right choice and to cease from following an evil path. Paul in Romans 2:14-16 says that there is a moral rule written on all people's hearts which sometimes excuses us and at other times accuses us. Augustine, one of the most significant of the western church fathers, was primarily interested in moral agency as it relates to our standing before God (Babcock 1988). Because he was interested in defending God's sovereignty, he found it difficult to distinguish between our moral choices in this world before others and how our choices impact our standing before God. Aquinas picks up the idea of morality in the 13th century, delving in to the question of the relationship of our conscience to reason (McInerney 1987). John Calvin believed that all human beings, even those without the special revelation of Scripture, possess notions of 'justice and rectitude' (Calvin 2002).

Luther accepted the natural law as a conscience present in all humans. It was not an instinct, but rather something that distinguished humans from animals (Grobien 2009). His views on natural law are presented in his writings and sermons, notably in his work 'How Christians Should Regard Moses' (Luther 1525). Luther's thought in this area was developed by later reformers such as Philip Melanchthon, Martin Chemnitz and Johann Gerhard (Preus 1962 and Preus 1970). From the late 19th century into the 20th century, however, an emphasis on natural law was lost and many came to see it as antithetical to Luther's view on the central role of the Scriptures (Baker 2011). A rediscovery of the place of natural law and conscience in Lutheran theology can be seen in works such as those by Grobien, Klug, and Simpson.

One Lutheran distinctive on the question of conscience is its relationship to the image of God given to the first two humans at creation (Genesis 1:27). Most other Christian traditions tie the existence of the conscience in all people to this image (Boyd 2002). This is especially true of those who see the image of God as a human characteristic which reflects God’s nature, such as a moral soul or the human conscience itself. The traditional Lutheran position, in contrast, is that the image of God consisted in having true knowledge

of God, and in the human will being perfectly conformed to God's will (Pieper 1950). The universality of the human conscience, present in Christians and non-Christians alike, is therefore not tied to the so-called 'imago Dei' in Lutheran thought.

1.6.2. The Conscience in Naturalistic and Positivistic Perspective

The scientific method has allowed humanity to make great strides in understanding and predicting the behaviour of many things in the natural world. The usefulness of the scientific process has led some to believe that all things, including the existence of the human moral compass, can be explained without any recourse to divine activity. Specifically, some have suggested that morality is a natural by-product of the Neo-Darwinian evolutionary processes which caused the development of the human brain. This sort of reasoning often follows two lines of thought. The first is that organisms which cooperate with each other are more likely to thrive, and so 'moral creatures' are more likely to survive to reproduce. Human neurology is therefore the result of this need for cooperation and trust. The second line of argument is that the neurology within the organism itself gives rise to the illusion of a moral compass.

Dawkins rigorously defends the notion that conscience is an illusion that arises from the genes of an individual striving for survival. He denies any room for individual cooperation in the survival of a species. In other words, altruism is simply a specific type of selfish altruism. It is the genes of the individual on which Neo-Darwinian processes act, and so it makes sense to Dawkins that it is the genes that direct the behaviour of the individual (Dawkins 2006). Although Dawkins does not focus specifically on neurology, his work is still considered a cornerstone of those committed to a naturalist and positivist view of human conscience.

Harris, a fellow atheist, attempts to differentiate between the 'is' and the 'ought' of human behaviour on the basis of scientific naturalism and positivism. He believes that all actual human behaviour is the product of deterministic processes occurring in our brain, which is itself the product of Neo-Darwinian evolution. In his words, 'We have much reason to believe that much of what we do in the name of "morality"...is borne of unconscious processes that were shaped by natural selection' (Harris 2010).

Some neuroscientists are using fMRI scans of humans faced with moral decisions to give a purely naturalistic and positivistic explanation for what theologians and philosophers

have called 'conscience' (Kahane 2011, Pujol 2012). Zak (2012) suggests that one's moral inclinations are tied to the oxycotin levels in one's brain, and that people with elevated oxycotin levels will act more altruistically.

1.6.3. The Conscience: Theology and Science in Dialogue

A reading of the scientific literature, as presented above, might lead one to believe that there is now an undisputed naturalistic foundation for what humans call the conscience. Other researchers, some from a science perspective and others from a theological or philosophical perspective, question the sufficiency of these explanations. Still others argue that while these explanations may give *an* explanation for conscience, they do not give an objective foundation for morality. Both of these groups give hints at a solution to the main problem of this mini-thesis.

First, there are problems with the science itself. Those such as Zak who propose a mechanism for why the brain acts in a certain way have not explained the origin of that mechanism. Philosophers of science such as Meyer (2009) have challenged the neodarwinian hypothesis for the origination of even the simplest cell, never mind the brain. Dawkins belief in a basis for moral action in gene-propagation have come under challenge by those advocating a more complex model for the brain's function (Penrose 1994, Nagel 2012). Stove offered serious critiques of any theory which believes it has explained altruism mechanistically or deterministically (1996). Beauregard (2012), a neuroscientist at the Université de Montréal, also disputes the purely naturalistic findings of other neuroscientists with his own fMRI scanning research.

Second, Christian theology proposes an objective human morality while current research into naturalist and positivist scientific theories seem limited to subjective or relative views of morality (Chamberlain 1996). Most humans instinctively recoil at the idea that gross violations of fairness and justice might be relative to one's point of view. This research will examine a greater breadth of academic work in the vein of views popularized by Zak, Harris and Dawkins and determine whether any offers an objective foundation for morality. If not, this would be a key apologetic opening for all Christians in dialogue with those who hold similar views.

1.7 Value of the Study

1.7.1 The Theological Value of the Research

While the Word of the Lord remains forever, and the deeply-held theological positions of most church bodies remain the same, our scientific understanding of the world continues to change. The belief stated in all three of the great western ecumenical creeds[5], that God is the creator of all things, remains at the core of Christian theology. But changing scientific views on the origin and preservation of the universe have forced Christians either to change or find new ways to defend their belief in God as creator. The theological value of this particular work consists in comparing and contrasting an important theological position for many Christians - the reason for the human conscience - in light of new scientific explanations for our moral compass.

1.7.2 The Practical Value of the Research

Christ's last commission to his Church, to make disciples of all nations, still stands. An important component of teaching Christ to the nations is understanding their objections to the Christian faith and addressing them. This research will help Christian apologists address those who object to the belief that God is the originator of moral law and conscience. Specifically, it will illustrate the strengths and weaknesses of contemporary scientific theories in light of the Scriptural proclamation that it is the Lord who has written his law on our hearts.

5 The Apostles', Niceo-Constantinopolitan, and Athanasian Creeds.

Chapter 2: Christianity and Conscience

2.1 Introduction

The concept that all humans have access to an objective moral standard, a natural law, through something normally referred to as a conscience, exists in Christian theological thinking from the very beginning of the Church through to the present day. [6] But the way that concept has been explicated within various theological systems, and the role it has played in those systems, has been varied. Theologians throughout Christian history have struggled with several key questions. First, is natural law accessible to those outside the Christian community? Second, is it accurate to say that natural law is accessed primarily through the human conscience, and if so how? Last, to what extent is the conscience a universal human phenomenon that can serve as a bridge for dialogue between Christians and those of other or no religious beliefs? This chapter will explore the key approaches to these questions throughout Christian theological history, beginning with the central Scriptural passage to which most theologians have turned for guidance.

2.2 Natural Law, Conscience and Romans 2:14-16

Christian discussions of the conscience centre on one key passage of Scripture: Romans 2:14-16.[7] Other texts occasionally surface in the discussion but with significantly less frequency. [8] There are many exegetical issues surrounding this passage which continue to be explored by modern biblical scholars.[9] However it is beyond the scope of this work to explore this current work. The exploration here will focus on the older history behind the interpretation of the text, since it is these interpretations that seemed to guide the early

6 Thus Charles (2011a:xviii), 'At the heart of the historic Christian tradition that spans two millennia lies the baseline conviction of a shared nature in all human beings, regardless of culture or location', Braaten (2011:5) 'We also have the capacity to choose between good and evil, that is, to obey or disobey the law of God written on our hearts to which our conscience bears witness. This view of natural law was the common conviction of philosophers and theologians for some twenty-five hundred years, from Plato and Aristotle to Aquinas and Bonaventure, as well as from Luther and Calvin to Kant and Hegel', and Backus (2003:8) who follows those who believe Christian natural law theology borrows heavily from 'Stoic philosophy and...Roman legal theory.'

7 John Calvin's primary discussion of natural law is found, for example, in his commentary on this passage (Backus 2003:10).

8 Charles (2011b:52) mentions Acts 17:16-34, Paul's Areopagus discourse, as a an example of a text appealing to a source of knowledge about moral affairs outside of Scripture. Grobien (2011:23) points out that the Scholastics included the Golden Rule (Matthew 7:12, Luke 6:31) as well as Paul's 'law of love' (Romans 13:8-10) in some of their discussions of natural law.

9 Indeed the proper interpretation of the word “law” within Paul's epistle to the Romans is an important issue in the so-called “New Perspective” within Pauline studies (Wright 1995:1, 29).

church writers through to the theologians of the time of the Reformation. The text of Romans 2:14-16 reads as follows according to the Nestle-Aland reconstruction of the Greek text (26th Edition):

> ὅταν γὰρ ἔθνη τὰ μὴ νόμον ἔχοντα φύσει τὰ τοῦ νόμου ποιῶσιν, οὗτοι νόμον μὴ ἔχοντες ἑαυτοῖς εἰσιν νόμος. οἵτινες ἐνδείκνυνται τὸ ἔργον τοῦ νόμου γραπτὸν ἐν ταῖς καρδίαις αὐτῶν, συμμαρτυρούσης αὐτῶν τῆς συνειδήσεως καὶ μεταξὺ ἀλλήλων τῶν λογισμῶν κατηγορούντων ἢ καὶ ἀπολογουμένων, ἐν ἡμέρᾳ ὅτε κρίνει ὁ θεὸς τὰ κρυπτὰ τῶν ἀνθρώπων κατὰ τὸ εὐαγγέλιον μου διὰ Χριστοῦ Ἰησοῦ. [10]

The key word in this verse is the Greek συνείδησις, defined simply as 'the psychological faculty that distinguishes between right and wrong, *i.e.*, moral sensitivity' (Swanson 1997).[11] The role and understanding of conscience and natural law in someone's Christian theology is heavily influenced by how he or she interprets this word, as will be shown in subsequent sections. It is the use of this word up to the point of Paul's inclusion of it in Romans 2:15 that will be considered here.

Jewett points out that συνείδησις is only used twice, for certain, in Stoic literature (Jewett 1971:411). Although used in Greek, Roman and Hellenistic Jewish literature from the 6th century BC to 7th century AD (Kittel 1964:903), its early usage did not point to an interior moral guide but rather to a sense of guilt over past failures.[12] Euripides, for example, writes about 'the torments of conscience into which man plunges himself by his own deeds' (quoted in Kittel 1964:905). Paul does seem to imply the conscience is something that can lead to correct future actions, for example in 1 Corinthians 8:10 and Romans 13:5 (Jewett 1971:403). But it is more likely that Paul's usage of συνείδησις here has in mind a

10 A very close translation of the Greek is provided in Young's Literal Translation, which reads as follows: 'For, when nations that have not a law, by nature may do the things of the law, these not having a law— to themselves are a law; who do show the work of the law written in their hearts, their conscience also witnessing with them, and between one another the thoughts accusing or else defending, in the day when God shall judge the secrets of men, according to my good news, through Jesus Christ.'

11 The word appears elsewhere in the New Testament, and Jahnel identifies eight translations of συνείδησις, including 'simple judgment of right and wrong (1 Cor. 8 and 10), functional conscience (Acts 23:1, 24:16), the function of witness, and general knowledge of moral standards' (Jewett 1971:404). But it is the way in which the word is used here in Romans 2:15 that is significant to this work.

12 'Conscience is the pain felt when man oversteps the moral standard which he himself accepts. It does not have a future orientation so as to guide moral conduct, but simply marks evil deeds already committed... [It is[the painful reaction of man's nature, as morally responsible, against infringements of its created limits' (Jewett 1971:411).

self-understanding that reflects back critically on past behavior.[13] Conscience, in this case, is more hindsight than foresight.

Besides wrestling with Paul's understanding of συνείδησις, Christian theologians have disagreed with who Paul intended to include in 'the nations' (τὰ ἔθνη). The general interpretation is that Paul intended to include all who were outside the Jewish people; there are, however, exceptions. Chrysostom writing in the late 300s AD says Paul 'is not speaking here of the righteous only but of all mankind' (quoted in Oden 1998:66). But Ambrosiaster, commenting on the same verse, writes 'It is Christians to whom Paul is referring when he speaks of accusing and excusing on the day of judgment' (quoted in Oden 1998:66).

Third, Christian theologians throughout history have had to interpret the referent for the word νόμος (law) in each of its uses in Romans 2:14-16. The law here can refer to the Law, the Greek word used for the Torah or the five books of Moses in the Septuagint. By the 5th century BC, the Greek world had come to use the word νόμος to describe 'written laws in the legal sense' (Kittel 1985:646). So the word can also mean 'ethical code.' In order to understand Romans 2:14-16, one must carefully parse out which intended use of the word 'law' Paul means in each case.

Last, there is the question of the relationship of conscience to the law that is raised here by Paul. Is there an objective moral law that can be known fully and accurately apart from revelation? Is the conscience what reveals this law to us, or does conscience act in some instinctual way which reason only later reflects on in a conscious manner? Throughout history the pendulum on this question has swung between those who see conscience as the reason which applies natural law[14] to those who see conscience as an instinct which may imply the existence of natural law, but without much detail.[15]

This passage will be the foundation on which many theologians will build their case for a morality or ethic that transcends the special revelation of Scripture. Some, such as the early church fathers, will see this as a point of contact between those proclaiming salvation

13 'While the modern understanding sees the conscience as a part of the self, functioning to help one discern right from wrong, conscience for the ancients was a knowledge of the self comprised of past actions performed by that self' (Reinhard 2012:409).

14 Thus Aquinas and his emphasis on conscience as a part of moral reasoning: 'Any action done with deliberation, consciously and voluntarily is a human action and therefore a moral action' (McInerny 1987:31).

15 Thus Luther, for whom natural law 'is expressed in what moves and affects people and is not the product of reason' (Pearson 2011:57).

in Christ and those who are outside the Church. Western Scholastic theologians will come to see moral theology as a discipline in its own right. The great Protestant reformers will question the value of natural law and the nature of conscience, emphasizing as many of them did the utterly fallen and depraved nature of humanity. For a time in the 18th, 19th and early 20th century, Roman Catholicism was left as the only western Christian tradition continuing to emphasize conscience and natural law as a key aspect of theology. Now, in the 21st Century, there is a renaissance in some Protestant traditions of thought about conscience. Each of these will be addressed in turn in the following sections.

2.3 Pre-Christian Background

As alluded to in the discussion about Romans 2:14-16, Greek philosophy prior to the Christian era and both Greek and Roman thought around the time of Jesus were not unaware of the existence of a human conscience. The Greek playwrights of the 4th century BC explored ideas of conscience and natural law, as did later philosophers such as Plato and Aristotle. At the time just prior to and shortly after Jesus' life on earth, Romans such as Seneca and Cicero treated extensively on the issue of natural law and human behaviour. They acknowledged the existence of universal principles that all humans were bound to follow, and some internal form of direction to prod and push people to the right and away from the wrong. The Hebrew Bible, however, possesses no similar concept.

Conscience - συνείδησις - for some Greek playwrights prior to Socrates was a sense that one had already transgressed some boundary of right behavior. In his play *Orestes,* written in 408 BC, Euripides' title character is asked 'What ails thee? What is they deadly sickness?' Orestes responds 'My conscience; I know that I am guilty of an awful crime' (Euripides 1910). Sophocles wrote his play *Antigone* a few decades prior to Euripides' *Orestes*. In that work, the title character professes a desire to see her brother Polyneices receive a proper burial. This is against the wishes of King Creon. Antigone appeals to a kind of natural law, claiming that human law is not 'of such a force, that a mortal could override the unwritten and unfailing statutes of heaven' (Sophocles 1902). In terms of conscience being tied to some form of objective right and wrong, Heraclitus in the 4th century BC states 'all human laws are fed by one divine law' (quoted in Charles 2011b:38).

In subsequent centuries Greek philosophy would address the issue of conscience and its relationship to an external law. Plato, in *Protagoras*, has the character of Hippias the Wise say 'O men...I consider you both to be kinsmen and friends, and fellow-citizens - by nature, not by law. For like is kin to like by nature. But the law, being the tyrant [ed: ruler] of man, many times constrains us against nature' (quoted in Colver 2011:256). Plato writes, therefore, of a law that speaks out against human nature (i.e. desires and passions). In his *Nicomachean Ethics*, Aristotle acknowledges 'some human behavior to be intrinsically wrong - for example, murder, theft and adultery' (Charles 2011b:81). Zeno the first true Stoic philosopher, writing in the mid-2nd century BC, teaches of a law that flows from nature itself. 'The aim and object of life is to live in agreement with nature...for this is the goal to which nature conducts us' (quoted in Colver 2011:258). This same Zeno, however, committed suicide in his old age after he lost the use of a finger due to a fall. He concluded that suicide in this situation was a natural course of action, something with which others might disagree.[16]

A parallel Greek philosophical concept to συνείδησις is that of πρόληψις. In Stoic thought, πρόληψις is 'the innate disposition towards certain concepts, such as the good and God' (Rubarth 2005:4a). If συνείδησις has do with feelings of guilt or innocence, then πρόληψις is the innate sense within humans that such feelings have some objective validity. Calvin will make specific use of this notion in his interpretation of Romans 2:14-16 and his understanding of conscience and natural law.[17]

Later Stoics such as Epictetus, Cicero, and Seneca spoke of conscience in its more modern guise as a guide to future moral action, rather than a mere sense that one has done good or evil. Epictetus used the Greek word συνείδω, of the same family as συνείδησις, to describe the concept of evaluating the rightness or wrongness of certain courses of action.[18] Cicero and Seneca, writing as they did in Latin, used *conscius* and *conscientia* as parallels to the Greek συνείδω and συνείδησις, respectively (Kittel 1964:907). They did not, however, see the law to which the conscience pointed as

16 'Reason is distorted and can come to a wrong conclusion, for example, that suicide is in accord with nature' (Colver 2011:259). This idea that conscience and reason can lead us to violate an objective, natural moral order is a conundrum discussed by later theologians.

17 'Appealing to the Greek notion of prolepsis, [Calvin] demonstrates that God implanted in the consciences of pagan nations an understanding of right and wrong, justice and injustice, sufficient to offset any mitigating excuse for sin' (Grabill 2006:95).

18 'When Epictetus once adopts συνείδω for his [concept of evaluating actions] he makes possible the later extension of conscience to the sphere of positive guidance in advance. But this does not take place in profane Greek prior to the Christian era' (Kittel 1964:905).

something of divine origin, but rather as something that was part of the natural order. It was nature's way of pointing men and women in the path they should go, and it was entirely dependent on the individual to heed or ignore this advice (Backus 2003:13). Nonetheless, even if this law was not given by the gods, it still behooved all people to follow it.[19] One could make the case that in the Latin *conscientia*, Latin philosophers were assimilating the concept of συνείδησις and πρόληψις into one, new idea.

As will be seen subsequently, many Christians see a natural, moral order expressed in a more distinct form in the covenant God makes with his people at Sinai. However this is not an idea readily found in the Hebrew Bible itself. Kittel points out that 'it is an astonishing fact that the OT did not develop any word for conscience...there is knowledge of good and evil only in remembering and keeping God's statutes' (Kittel 1964:908). Where the Greeks feel a 'muffled disquiet,' a nagging sense of guilt, the Hebrew Scriptures proclaim 'the clear voice of the accuser,' that the Law as revealed clearly in God's Word has been violated (Kittel 1964:908).[20]

Christianity, then, comes on to the world stage when the ideas surrounding questions of conscience and natural law are changing. The idea of a conscience that operates *post facto* as an evaluation of the moral rectitude of past behavior is present centuries before Christ. With the advent of Zeno and Stoicism, there is a growing sense that conscience leads one to act in accordance with nature and helps one make decisions about future actions. It is no longer simply a 'guilty feeling' about actions one has already taken, or chosen not to take. While the Hebrews had no direct analogy to conscience, they had a strong sense of right and wrong which they tied not to an internal sense but to the external Word of God. It was into this intellectual environment that Christianity was born.

2.4 The Early Church Fathers

In the centuries after the ascension of Christ, the Church began to systematize the new Word from God recorded by the evangelists and apostles. Many of the Church's teachers

19 'Cicero is considered the primary interpreter and transmitter of the Stoic understanding of natural law' (Charles 2011b:82). Calvin likewise quotes Cicero in his *Institutes*: 'There is no people so wild and savage as not to have believed in a God, even if they have been unacquainted with His nature... It is necessary to believe that there are gods, because we have an implanted or rather innate knowledge of them' (Calvin 1989, 1:3).

20 Consider, for example, Psalm 16:7a (ESV) 'I bless the LORD who gives me counsel'; Psalm 40:8 ESV 'I delight to do your will, O my God; your law is within my heart'; and Psalm 119:11 'I have stored up your word in my heart, that I might not sin against you.'

in its first four centuries of life after Christ's resurrection offered their own interpretations of Paul's thought in Romans 1 and 2. Following these ideas gives a good sense of how the Church's thinking on the question of conscience and natural law was developing.

Justin Martyr wrote in defence of the Christian faith in the 2nd century AD. In his dialogue with Trypho, Justin insists that God has given all peoples on earth access to the law. Though humans know what is wrong, and still commit those wrongs, 'yet they do not escape from the knowledge that they act unrighteously whenever they do so' (Martyr 2001, ch.93). Except that some do seem to escape, for some people do not sense that they have sinned when doing things contrary to God's Word. In this case, Justin writes, they have been taught or forced to trade natural ideas for unnatural ones.[21] This is one of the first attempts in Christian theological thought to address the question of why conscience does not inflict all people equally. As will be seen subsequently, Aquinas, Luther and Calvin all take up this question but answer it in quite different ways.

Clement of Alexandria taught the Christian faith in Egypt in the late 2nd century AD. Well-versed in Greek philosophical thought, Clement's theology was influenced by Plato and by later Stoics.[22] One can therefore see reason and thought playing a greater role in Clement's conception of conscience and human understanding of natural law. The passions of the soul lead one into sin because they lead one away from reason.[23] Clement defines all sin as that which is 'done through error of reason' (Clement 2001, 1:13). This introduces an idea which will be picked by by Aquinas, that reason should play a significant role in helping humans determine good from bad actions.

Tertullian goes so far as to include knowledge of the true God within the scope of the natural law. Human conscience points all people, even those not acquainted with either

21 'Every race knows that adultery, and fornication, and homicide, and such like, are sinful; and though they all commit such practices, yet they do not escape from the knowledge that they act unrighteously whenever they so do, with the exception of those who are possessed with an unclean spirit, and who have been debased by education, by wicked customs, and by sinful institutions, and who have lost, or rather quenched and put under, their natural ideas. For we may see that such persons are unwilling to submit to the same things which they inflict upon others, and reproach each other with hostile consciences for the acts which they perpetrate' (Martyr 2001, ch.93).

22 'First rate neither as a philosopher nor as a systematic theologian, Clement of Alexandria nevertheless occupies a crucial place in the process of what is often called 'the hellenization of Christianity' (Outler 1940:217).

23 'Everything that is contrary to right reason is sin. Accordingly, therefore, the philosophers think fit to define the most generic passions thus: lust, as desire disobedient to reason; fear, as weakness disobedient to reason; pleasure, as an elation of the spirit disobedient to reason. If, then, disobedience in reference to reason is the generating cause of sin, how shall we escape the conclusion, that obedience to reason - the Word - which we call faith, will of necessity be the efficacious cause of duty?' (Clement 2001, 1:13).

the Hebrew Bible or the Christian writings, to some form of knowledge of the true deity. Even when humans create other forms of religion - monotheistic or polytheistic - yet they retain some knowledge of the God of Scripture.[24] Tertullian takes this line of attack in defending the orthodox faith against the heresy of Marcionism, which denied that the God of Jesus Christ was also the God of Genesis 1 and 2. Nonetheless, by saying that all races 'call the God of the Jews their God' if only in their souls, Tertullian adds a new dimension to the idea of natural law (Tertullian 2001, 1:10). He suggests that there is an objective moral code that includes some form of knowledge of the God of Scripture as the one, true God.

One must at this point mention Jerome, who played a crucial role in the development of theologies of conscience. It was Jerome who chose to use the Latin word *conscientia* as the translation of the Greek word συνείδησις.[25] This choice of translation tipped the scales significantly in favor of an interpretation of συνείδησις as something more than a mere feeling of guilt. It merged the word with the concept of πρόληψις and gave conscience a more Stoic flavor. Since Jerome's translation of Scripture into Latin, conscience in the west was identified increasingly with the human ability to reason or feel one's way to a proper course of action, taking into account an exterior norm. It was seen less and less as a post-facto response to actions already taken.

But it was in commenting on the texts of Scripture, most importantly Ezekiel, that Jerome would make his second, perhaps unintentional, contribution to theologies of conscience and natural law. In his interpretation of the four-faced living creatures in Ezekiel 1:4-14, Jerome attempts to draw an analogy between each face and Plato's tripartite division of human nature into logic, emotion and appetite.[26] He supplies a fourth part of human

24 'The greater part, therefore, of the human race, although they knew not even the name of Moses, much less his writings, yet knew the God of Moses; and even when idolatry overshadowed the world with its extreme prevalence, men still spoke of Him separately by His own name as God, and the God of gods, and said, 'If God grant,' and, 'As God pleases,' and, 'I commend you to God.'' (Tertullian 2001, 1:10)

25 'Paul's Epistles rely upon the term syneidesis, a broadly inclusive term which anticipates conscientia in its suggestion of... a knowing by the self 'which knows with itself.' By translating the noun syneidesis as conscientia, Jerome introduced it at one stroke as a crucial category of Christian self-understanding. The two terms are not, of course, precisely equivalent. In choosing conscientia, Jerome could not avoid certain of its previously formed connotations... While syneidesis was an inner quality, inherent in the individual, consciencia was a term that looked, Janus-faced, in two directions: inwardly, to be sure, but also outwardly, as in Ciceronian and Classical-legal understanding, to public opinion and shared values' (Strohm 2011:8).

26 'Most people interpret the man, the lion and the ox as the rational, emotional and appetitive parts of the soul, following Plato's division, who calls them the logikon and thymikon and epithymetikon, locating reason in the brain, emotion in the gall bladder and appetite in the liver. And they posit a fourth part which is above and beyond these three, and which the Greeks call synteresin: that spark of conscience which was not even extinguished in the breast of Cain, after he was turned out of Paradise and by which

nature, conscience, which he labels in Greek *synteresin*, not *syneidesin* which is the usual Greek word and the one used by Paul in Romans 2. Modern scholarship has assumed this to be a writing mistake on Jerome's part (Kries 2002:67). However the effects of that mistake continue to be felt even in contemporary Catholic moral theology.[27] It would become a significant preoccupation in the period of medieval scholasticism.

In the late 4th and early 5th centuries AD, significant Christian voices such as John Chrysostom and Augustine add their voices to the chorus. Chrysostom, in his homilies on the Epistle to the Romans, gives us his thoughts on human conscience and the existence of a natural law accessible to all people apart from a revealed Word of God. He sees in Paul's words in Romans 1 the existence of a natural instinct towards the right, which humans have by virtue of being created beings.[28] He further interprets Romans 2:15 as referring to all people, not simply to Christians who attempt to keep a moral law but not the Jewish ceremonial code (Oden 1998:68).

Augustine, the great church father of the Western Church, says not much more than his predecessors on the subject of conscience and natural law. But as with much of his writings, what he says is profound and will influence later theologians, especially those of the Reformation. In his *Confessions*, he reflects on the subject of conscience and law autobiographically, reflecting critically on events of his youth. When he was young he stole pears from a neighbor's tree, simply for the pleasure of doing what he knew to be wrong. On the one hand, he recognized that something within him - conscience - identified his actions as incorrect. On the other hand, something else within him - will, perhaps? - led him to do the thing anyway (Augustine 2001a, 2:6). This is a valuable, first-person attempt to address the question of the absoluteness of a natural law, the accuracy of conscience, and the actions of those who violate both. He also points out that humans are quick to judge others, while very slow to be judged by others or even their own conscience.[29]

---

we discern that we sin, when we are overcome by pleasures or frenzy and meanwhile are misled by an imitation of reason' (Jerome quoted in Hogan 2002:129).

27 Consider University of Texas Philosophy Professor and Roman Catholic proponent of natural law theory, Budziszewski. He uses the distinction that Jerome will make between conscientia (the Latin translation of συνείδησις) and his newly minted word synderesis or synteresis to argue for a 'deep' and a 'shallow' conscience within each human being (Budziszewski 2003:85).

28 'For we have a sort of family feeling even by nature towards one another, which even beasts have got towards each other' (Chrysostom 2001, Rom. 1:31)

29 'And what could I so little endure, or, if I detected it, censured I so violently, as the very things I did to others, and, when myself detected I was censured, preferred rather to quarrel than to yield? Is this the innocence of childhood?' (Augustine 2001a, 1:18) Charles poses the question this way: 'Why is it that although an individual's conscience as an internal moral guide can be ignored, hardered, or seared, all

Augustine also addresses the question of whether conscience is something tied to human emotion, to instinct, to reason, or to some combination thereof. In his *Enchiridion*, he suggests that our conscience is not tied to reason but rather helps us differentiate between things which reason has revealed. A good act or a bad act cannot be distinguished by evaluating the acts themselves, but solely by looking at the intention of the actor. In other words, an act is truly wrong only when it is done in violation of the conscience of the person doing it.[30]

The teachers of the early church set theology on a path that recognized that all humans could be held accountable by God for what they did for two reasons. The first is that their conscience, a gift given by God, should have led them to do the right and not the wrong. Whether that conscience was disobeyed (Augustine), abused (Justin) or not trained (Clement) was irrelevant to the fact that it was intact and God-given in the first place. The natural law to which our consciences point includes not only a sense of what actions are just or unjust, but even (re: Tertullian) what religions were correct or incorrect. With the advent of Jerome's Vulgate, the Church - at least in the West - seemed to have a fairly robust understanding of how God used the conscience to hold all nations accountable to his law, even those who had no access to Scripture.

2.5 Medieval Scholasticism

It would not be until the beginning of the second millennium that great advances in the area of conscience and natural law theology would be made again. But in that century great thinkers came on the scene who took moral theology in a direction which continues to influence Christians to this day. All scholastic theologians more or less assumed that human conscience was that property by which means humans could discern right from wrong (Grobien 2011:27). It enabled humans do understand both natural law - accessible to reason - and revealed law - mediated by the teachers of the church (Grobien 2011:25). It was also generally assumed that any moral principles accessible to reason or conscience were essentially the same moral truths taught in the Scriptures and by the church (Grobien 2011:21). Medieval Europe was, after all, suffused with Christianity and philosophy and theology were, by and large, indistinguishable.

people at all times and in all places, regardless of social location and placement in history, react to injustice when it visits them, and they do so without fail?' (2011b:77).

30 'Not looking at the matter spoken of, but solely at the intention of the speaker, the man who unwittingly says what is false, thinking all the time that it is true, is a better man than the one who unwittingly says what is true, but in his conscience intends to deceive' (Augustine 2001b:18)

As mentioned earlier, Jerome's use (or creation) of the word *synteresis* or *synderesis* in his commentary on Ezekiel shaped medieval thought on the conscience. Peter Lombard in his significant 12th century *Sentences* quoted Jerome's commentary in answer to the question of how someone can know what is good and yet choose to do evil. His answer is Jerome's, that a spark remains with humans that directs them to right or wrong action (Hogan 2002:131). While Lombard did not use the word synderesis itself, subsequent theologians would pick up on it and use it with increasing regularity.[31] Aquinas would, among other things, cement the scholastic distinction between 'synteresis as man's inborn knowledge of God and conscientia as the guide for moral action' (Jewett 1971:403). What the early church fathers had seemed to bring together - συνείδησις as both reflection on past acts and guide to future acts - the scholastics separated once more. Their separation, however, was on the basis not of time but of instinct over and against reason.

2.5.1 Thomas Aquinas

The most notable of the scholastic thinkers was Thomas Aquinas, whose great *Summa Theologica* written in the late 13th century shaped the theology of the Western Church and gave special prominence to the role of reason in acquiring knowledge about morality and about theology itself. Aquinas had access to the philosophers of antiquity, and was especially influenced by the thinking and ethics of Aristotle, especially his *Nicomachean Ethics*.[32] He appropriates Aristotle's concept that actions should be guided to fulfil, rather than lead away from, the ultimate end or τέλος of things. For Aristotle, the τέλος of all humans is happiness, resulting from contemplation (McInerny 1987:32). Aquinas defines happiness as fulfilling man's natural purpose. Humans share a first end with all things which exist, which is to preserve their own being. They share a second end with other animals, namely pro-creation and the bringing up of offspring. They have a third, unique end, which is 'according to the nature of... reason,' and that is to 'know the truth about God, and to live in society' (Aquinas 1947, I-II:94:2). Using reason, humans can strive towards these natural ends, which reason apprehends 'as being good, and consequently as objects of pursuit' (Grobien 2011:24).

31 'This Lombard text became one of the catalysts for the theology that the scholastics built around *synderesis*' (Hogan 2002:131-132).

32 There is dispute over the degree to which Aquinas is completely indebted to Aristotle or simply uses his initial premises and then charts his own course. McInerny insists that 'the moral philosophy of Aquinas is a version of Aristotelian ethics' (McInerny 1987:31), while Porter believes 'it is not a simple adaptation of Aristotle's structure to theological purposes' (Porter 1995:6).

Aquinas believed in an eternal law which was an expression of Supreme Reason, something which Aquinas takes from Augustine's work *On Free Choice of Will.*[33] He distinguishes in his *Summa Theologica* between the promulgation of the eternal law through 'the Divine Word and the writing of the Book of Life' (Aquinas 1947, I-II:91:1). Natural law is then the participation of humans in the eternal law by way of reason, which guides us according to nature.[34] 'While animals act according to the order of nature through instinct, the human person acts by reflecting on his possible options, informed by inclination and senses, and choose the option that seems to accomplish a good purpose' (Grobien 2011:25).

Moving away from the idea of conscience as guilty reflection on past behaviour, Aquinas placed conscience in the realm of the application of reason towards future actions, chiefly future actions directed towards the natural human τέλος. Whether 'basic bodily need, the desire of the senses, or the fulfilment of the intellect,' all could be considered natural goods, so long as they were directed towards a preservation of being, promulgation of the species, knowledge of God and establishment of a fruitful society (Grobien 2011:24).

Because Aquinas tied conscience so closely to reason, he saw it as something that needs to be trained, and not as something instinctual.[35] Moral behaviour has an instinctual component, the aforementioned *synderesis*, but conscience itself is the reasoned application of that instinct.[36] It takes repeated action, good thinking, and much effort to form individuals who act for good and oppose evil. Conscience, then, is not something that is purely inborn but something that can also be cultivated, or lost.[37]

33 'That Law which is the Supreme Reason cannot be understood to be otherwise than unchangeable and eternal' (quoted in Aquinas 1947, I-II:94).

34 'Every act of reason and will in us is based on that which is according to nature, as stated above (Q[10], A[1]): for every act of reasoning is based on principles that are known naturally, and every act of appetite in respect of the means is derived from the natural appetite in respect of the last end. Accordingly the first direction of our acts to their end must needs be in virtue of the natural law' (Aquinas 1947. I-II:91).

35 ' Properly speaking, conscience is not a power, but an act. This is evident both from the very name and from those things which in the common way of speaking are attributed to conscience. For conscience, according to the very nature of the word, implies the relation of knowledge to something: for conscience may be resolved into "cum alio scientia," i.e. knowledge applied to an individual case. But the application of knowledge to something is done by some act. Wherefore from this explanation of the name it is clear that conscience is an act' (Aquinas 1947, I:79).

36 For Aquinas, conscience 'is the human act of applying moral principles to particular actions and is to be distinguished from synderesis, which is the habitual knowledge of primary moral principles' (Backus 2003:12).

37 Thus Niebuhr, who writes 'Thomas [Aquinas] is keenly aware that moral goodness comes through effort, that society and each individual person must expend immense labor in order that the habits of action necessary to human and humane existence may be formed and maintained' (1951:133) and McInerny: 'Neither knowledge of natural law, a sane legal code nor a reasonable ethics can assure that our actions will be good. Good action is the product of character...and character is formed by repeated acts of a given kind until our hearts are inclined to good action' (1987:33).

Ockham and the nominalist school would challenge Aquinas' moral theology to a certain extent (Grobien 2011:29). They questioned whether Aquinas assigns to human reason too great an ability to distinguish between right and wrong, and to understand good ends from bad ends. Others began speaking out even against established church practice on the basis of another authoritative source of knowledge, newly translated or accessible copies of the Bible. This was done for the sake of 'conscience' as in, for example, the case of Wyclif and the Lollards.[38] Both of these ideas, that human conscience has limited access to objective moral truth and that conscience can lead one to oppose established order, would become significant parts of Protestant Reformation thought.

2.6 The Protestant Reformers

Both John Calvin and Martin Luther took Christian thought on the question of human conscience and natural law away from the scholastic rigours of Aquinas. As will be shown below, neither were interested in developing the kind of rigorous moral theology that the medieval period, as typified by Aquinas, displayed. They were driven by the idea that humanity's relationship with God has been severed by sin, and that no amount of human thinking or work can re-establish a peace with God from our end. Given this emphasis, neither could accept a theology, even one striving for sound morals and ethical behaviour, that gave human reason an ability to understand and apply the Eternal Law of God.[39]

2.6.1 Martin Luther

The early church fathers, if they referred to the conscience or to the idea of a universal moral standard at all, did so in the context of teaching Scripture. As was illustrated earlier, their preaching and teaching on Romans 2:14-16 was helpful in discerning their views on the topic. Likewise with Luther.[40] To understand his position on conscience, one must turn to his preaching and especially his exposition of key biblical texts to understand his views.

38 'The richest source of such appeals [to a personal conscience apart from church tradition] is to be found in the writings of theologians John Wyclif and his Lollard followers...[He believed] individual Christians ought better to judge merit *in their own conscience* than relying upon the views of others' (Strohm 2011:16).

39 'A Christian theological affirmation of natural law will be different from a purely philosophical assessment, because the idea that the original creation and human reason have been deeply affected by sin is based on biblical revelation, to which philosophy can make no appeal' (Braaten 2011:13) and 'Luther emphasized "the natural law as the law of love and the corruption of human reason through sin' (Grobien 2011:32).

40 'Because Luther nowhere offers a systematic account of natural law, we are forced to cobble together...his attitude toward it from the fragmentary comments he makes in texts' (Pearson 2011:53) and 'there is nothing in Luther that resembles the complete natural ontology of law we found in Aquinas' (Pearson 2011:55).

One key text in this regard is his sermon, *How Christians Should Regard Moses*.

Luther in this sermon explicitly states the doctrine of the two kingdoms. Christ governs the visible kingdoms of humanity through the sword, but in a hidden way. He also governs those who are truly his but are hidden from the world, the true church.[41] Jewish law, Luther argues, is distinct from Gentile law, although 'the Gentiles have certain laws in common with the Jews, such as these: there is one God, no one is to do wrong to another, no one is to commit adultery or murder or steal, and others like them. This is written by nature into their hearts; they did not hear it straight from heaven as the Jews did' (Luther 1999a:164). Further on, Luther argues that Christians can use Moses in so far as the rules God gave through Moses agree with the law of nature, written on our hearts (Luther 1999a:167). He also points out that, just as the Jews had the law but did not keep it, so too do the Gentiles who have the law written on their hearts also not obey it (Luther 1999a:168). Luther therefore not only upheld the notion of a natural law to which all people could appeal, but made it a touchstone by which the Old Testament laws could be interpreted as useful or not useful for Christians.

Unlike Aquinas, who relied heavily on Aristotle as starting point for explaining the content of natural law, Luther reduced it back to the principle of doing good and eschewing evil.[42] As will be seen below in his understanding of conscience, Luther was not certain to what degree non-Christians could discern even the simple difference between right and wrong. He used 1 Corinthians 4:4[43] to show that the conscience is no infallible guide; it can err (Chester 2006:521). Aquinas would not have disagreed, but would have used this fact to emphasize the need for sound training. For Luther, that training can only come through a careful reading of the Word of God and not through philosophical reflections on some law accessible to reason (Grobien 2011:37).

Luther applied his understanding of the two kingdoms to his understanding of natural law and of conscience (Chester 2006:516). There was the conscience as it stands before

41 '[God] intended to institute the tangible [eusserliche] and spiritual government... It was previously stated how, on the advice of Jethro, his father-in-law, Moses had established the temporal government and appointed rulers and judges [Exod. 18:13–26]. Beyond that there is yet a spiritual kingdom in which Christ rules in the hearts of men; this kingdom we cannot see, because it consists only in faith and will continue until the Last Day. These are two kingdoms: the temporal, which governs with the sword and is visible; and the spiritual, which governs solely with grace and with the forgiveness of sins' (Luther 1999a:163-164).

42 The Golden Rule, for Luther, is the best expression of the natural law yet the corruption of sin 'severely distorts one's capacity to know and act on the natural law' (Grobien 2011:32).

43 'For I am not aware of anything against myself, but I am not thereby acquitted. It is the Lord who judges me' (1 Corinthians 4:4, ESV).

God, and the conscience as it guides actions in temporal society.[44] When Luther speaks of the conscience of non-Christians leading them astray, he is generally speaking of the conscience in so far as it informs the person's standing before God. The conscience can err in temporal matters as well, but here it is not so simple as to say Christians are led by God's Word but non-Christians are not. In the temporal world, even some non-Christians can be led more accurately by conscience than Christians.[45] Each person, in the temporal world, has been placed by God (whether they are aware of it or not) into vocations within certain orders. These 'orders of creation [are] the Lutheran equivalent to the classical notion of natural law' (Wenz 2011:84). Conscience guides one in the temporal realm to act appropriately in the realms of family, state and work (Braaten 2011:9).

Luther also reinterpreted the old scholastic definitions of conscience, especially the idea of distinguishing between *syntheresis* or the spark of conscience and conscience itself, the reasoned application of moral principles to life. Luther changed the definitions, and 'redefined *suneideisis* from *virtus operandi* to *virtus iudicandi*; furthermore he defined the good conscience as knowledge of one's justification in Christ' (Jewett 1971:403). He made a new distinction between the conscience of the Christian and that of the non-Christian. In Augustinian tradition the voice of conscience was identified closely to the voice of God speaking in a person (Jewett 1971:404). For Luther, this was only true of the justified sinner and not of the sinner apart from Christ. Such a person was as likely to be hearing sin as to be hearing God (Jewett 1971:404). Luther believed that 'the unbelieving sinner recreates the natural law, as he does God, in the image of himself' (Grobien 2011:33). Only when the veil is lifted from one's eyes, as Paul speaks of in 2 Corinthians 4:3-4[46], can one perceive both Scriptural law and the natural law clearly.

---

44 'If the apostle [Paul] condemns his life in Judaism—the life that looked so fine—and the righteousness of the Law to such an extent that he regards them as dung and loss, what will those who praise human nature and laud moral works bring forward as an excuse? If this progress of the apostle was evil—which surely was approved by every rule of reason and even by the very Law of God, inasmuch as the “end” (as they call it) of his life was zeal for God and for His Law—what will their actions be—their actions which they boast of with either another end or a similar end in mind?' (Luther 1999b:89).

45 Luther writes: 'If natural law and reason would stick in all heads, men's head are equal, then fools, children and women could rule as well and leads wars as David, Augustus, Hannibal, and Phormios must be as good as Hannibal. Yes, all men should be equal and no one would rule the other...But God has created it thus, that men are unequal and one should govern the other...Therefore one finds that among those who claim or boast of natural reason or law are many splendid and great natural fools. For the precious jewel which is called natural law and reason, is a rare thing among the children of men' (WA 51:212, quoted in Ziegler 2011:70)

46 'And even if our gospel is veiled, it is veiled to those who are perishing. In their case the god of this world has blinded the minds of the unbelievers, to keep them from seeing the light of the gospel of the glory of Christ, who is the image of God' (2 Corinthians 4:3-4 ESV).

This leaves one last question to be addressed in this short overview, and that is to what extent Luther saw conscience - both toward God and toward neighbour- as more rational or instinctual. There is a diversity of opinion on this point. Grobien takes the side of those who believe that, for Luther, conscience relied on intellect to discern and carry out right action (2011:32). He accepts that 'Luther received the basic tradition of the natural law from the Medieval Church' and that conscience remained an act of 'intellect and will' (Grobien 2011:32). Pearson, however, disagrees and writes that, for Luther, '[natural law] is expressed in what moves and affects people and is not the product of reason' (2011:57). He believes that Luther moved the concept of natural law more into the realm of the instinctual.[47] What seems clear from this debate is that Luther's position is not given to oversimplification. He wants to avoid reducing conscience to an animal instinct or mere emotion, but neither does he want it to become an intellectual endeavour in the style of Aquinas and medieval scholastic theology.

Luther's chief contributions on the question of conscience and natural law where fourfold. First, he reintroduced the Scriptures into the argument, relying on texts from both the Hebrews Scriptures and the Christian Testament to make his points. Second, he re-emphasized the need for Scripture to inform the Christian conscience as opposed to philosophical reflections. Third, he distinguished between the roles of conscience in our relationship with God and our relationships with our neighbour, distinguishing sharply between the two and tying the distinction to his two kingdoms theology. Fourth, he put conscience and natural law in their place, making them servants to the Gospel of Christ and speaking of them in such a way that they neither overshadowed the cross of Jesus nor the Word of God.

2.6.2 John Calvin

The second great figure of the Protestant Reformation was John Calvin, the French priest who became the leader of the nascent Protestant church in Geneva, Switzerland. Calvin shared some of the convictions of his near-contemporary, Luther, especially in emphasizing the role of Scripture in the life of the Church and of teaching salvation by grace apart from a person's reason or merits. His primary preoccupation on the question

47 'Ultimately, Luther creates a new account of natural law morality: instinctive, not rational; provisional, not ontologically secured; pragmatic, not divinely commanded; chastened by sin, not robust with natural human possibilities' (Pearson 2011:63).

of conscience and natural law, however, was not civil government but rather the standing of a person before the face of God.[48]

For Aquinas and the scholastic theologians the purpose of the natural law was to guide humanity to good ends and away from evil ends. Using reason informed by Scripture and church teaching, Christians and societies could derive temporal laws from God's eternal laws. For Calvin, this is not the primary purpose of the conscience or of natural law. That purpose is to render all humans guilt without excuse before God, apart from Christ. He makes this point not only in his 1559 *Institutes of the Christian Religion* but also in his commentary on Romans 2:14-16.[49] Since, as with Luther, Calvin's primary theological program is locating salvation entirely outside of the human and in Christ alone, he wishes to establish on what basis God can hold all people guilty including those who have not received special revelation. This he does by showing that all people have a conscience which shows them guilty of injustice.[50]

That is not to say that Calvin sees no temporal good even among non-Christian nations. Like Luther, he distinguishes between righteousness in society and righteousness before God. He believed that the good behaviour of non-Christians was also a manifestation of God's gift of conscience and law apart from Scripture.[51] Calvin himself writes that all human law should strive toward the kind of justice that conscience says ought to exist in the world, even apart from the Word of God.[52] Like Luther, Calvin did not believe that natural law was an actual set of regulations one could use reason to discover. Rather, natural law was the sense of what ought and ought not be, which civil governments could shape into specifics rules and regulations (Backus 2003:11).

---

48 'For Calvin, the conscience itself was of importance and not so much the specific instantiation of it in moral principles or civil codes' (Backus 2003:13) and 'The end of the natural law, therefore, is to render man inexcusable, and may be not improperly defined—the judgment of conscience distinguishing sufficiently between just and unjust, and by convicting men on their own testimony depriving them of all pretext for ignorance' (Calvin 1989, 2:2:22).

49 'They prove that there is imprinted on their hearts a discrimination and judgement by which they distinguish between what is just and unjust, between what is honest and dishonest' (Calvin 1849, Rm 2:14-16).

50 '[Calvin] demonstrates that God implanted in the consciences of pagan nations an understanding of right and wrong, justice and injustice, sufficient to offset any mitigating excuse for sin' (Grabill 2006:95).

51 "...theologians such as Calvin were clear that the accomplishments of pagans were manifestations of the lingering image of God and of the gifts of the Holy Spirit - things that would seem, therefore, to bring glory to God even apart from his saving work' (VanDrunen 2007:300).

52 'Now, as it is evident that the law of God which we call moral, is nothing else than the testimony of natural law, and of that conscience which God has engraven on the minds of men, the whole of this equity of which we now speak is prescribed in it. Hence it alone ought to be the aim, the rule, and the end of all laws' (Calvin 1989, 4:20).

Like Luther, Calvin did not believe that conscience was simply another way of speaking about reasoning our way to moral ends. Laws are discovered, apart from Scripture, by reason and conscience working together (Grabill 2006:92-93). How did Calvin define conscience, specifically? He chose to introduce another Greek concept into the discussion of natural law, the word προληψεις. The word is used in his commentary on Romans 2:14-16, where Calvin writes that 'it is beyond all question evident that [pagan nations] have some notions of justice and rectitude, which the Greeks call preconceptions προληψεις, and which are implanted by nature in the hearts of men' (Calvin 1849, Rm 2:14-16). The ancient Greeks understood προληψεις to be a preconception with which one is born, rather than something which one acquires through experience or education.[53] He adjusts the way the word was used in Greek philosophy for Christian use, implying that all people are born with a disposition to form a concept of right and wrong (Backus 2003:10). By introducing this word into the discussion concerning conscience, Calvin explains how humans can both have a natural impulse toward good (the *synderesis* of the scholastics), but also how its expression would vary between individuals depending on how the preconception is shaped. This προληψεις made it possible for people to know what is good and right and true, but it was not itself a desire to do it.[54]

Calvin's important contribution to natural law and conscience is threefold. First, he emphasized that the primary purpose of conscience is not to direct human action in the temporal world, but rather to hold all humans accountable to God. This reflected Calvin's desire to place Christ and his saving work at the centre of the Christian enterprise. Second, he downplayed the importance of the Scriptures as a template for human law in this world, giving civil authorities much more freedom to enact laws based on conscience and reason. Last, he introduced the concept of προληψεις into the theological discussion.

2.7 From Reformation to Modernity

The evolution of Christian thought on the question of conscience and natural law over the next five centuries would be shaped profoundly by the three great thinkers of the preceding three centuries, namely Aquinas, Luther and Calvin. As a general rule, Roman Catholicism would continue down the path laid by Aquinas in developing and applying

53 'Also closely associated with the doctrine of the primary impulse is the Stoic doctrine of preconception [prolepsis]. A preconception is an innate disposition to form certain conceptions. The most frequently mentioned preconceptions are the concept of the good and the concept of God' (Rubarth 2005).

54 '...not that it was so engraven on their will, that they sought and diligently pursued it, but that they were so mastered by the power of truth, that they could not disapprove of it' (Calvin 1849: Rm 2:14-16)

moral principles accessible to all people, Christian and non-Christian, by way of conscience-informed reason. Protestants would, for their part, struggle with the role of natural law in their theology. preferring instead to speak of Christ's work in the two kingdoms and in the orders of creation.[55]

Several Reformed figures between the time of the Reformation and the 21st Century would contribute to the discussion on conscience and natural law in a significant way. Consider for example Hugo Grotius, the great early 17th century Dutch thinker. He would argue that one could speak of natural law without giving 'a theological account of divine reason or will' (Grobien 2011:19). That would lay the foundation for a secular treatment of natural law apart from theology in such people as John Locke. Others such as 17th century theologian Francis Turretin continued to insist that the conscience's awareness of an oughtness in human behavior 'necessarily implies the knowledge of God, the legislator' (quoted in Grabill 2006:157). The 19th century Dutch Prime Minister and theologian Abraham Kuyper believed in the idea of common grace, that natural law was a gift from God exercised even among non-Christian peoples.[56] Yet he also believed that it was in Christian countries that this natural law was most accurately represented (VanDrunen 2007:296).

Those following Martin Luther, theologically and chronologically, continued to teach that the natural law was a gift from God that permitted humans to live together in harmony. This, in the end, serves the Gospel by allowing its preaching to have free course.[57] Martin Chemnitz , the 16th century writer of the Lutheran Formula of Concord, believed that in

55 See VanDrunen, who writes 'Common perception seems to be that natural law is a Roman Catholic idea and the two kingdoms a Lutheran concept' (2007:283), Colver who writes 'A distortion of natural law from the Lutheran tradition lends itself toward reductionism and relativism, while the Calvinist view of natural law leads toward an absolutist position of a Christian kingdom on earth. From the perspective of Roman Catholic thought, both Lutheran and Calvinist views on natural law are derivative and incomplete in comparison with Thomas Aquinas' (Colver 2011:252-3) and Wenz who writes that among liberal Protestant theologians of Germany, the 'impression one gets here is this: natural law is a specifically Roman Catholic doctrine, which has no relevance among Lutherans or Protestants in general because they base their judgments on their conscience alone, not on external, objective norms' (2011:80).

56 Abraham Kuyper writes in his *Ordinances of God*: 'If we considered the political life of the nations as something unholy, unclean and wrong in itself, it would lie outside of human nature...However, if we open the works of Calvin, Bullinger, Beza, and Marnix van S. Aldegonde, it becomes obvious that Calvinism consciously chooses sides against this viewpoint...The earnest intent of the political life of many nations can be explained in terms of the principles of justice and morality that spoke in their consciences' (quoted in VanDrunen 2007:288).

57 'We gratefully recognize this blessing that He did not will that the entire light of the Law should be extinguished through the Fall, but willed that there be certain vestiges of it which remained, so that there could be the civil association of men, in which God through the voice of the Gospel might gather His church' (Chemnitz 1989:436). Chemnitz ties this idea to Paul's words in Romans 2:15.

Romans 2:15 Paul was urging that 'these vestiges should be highly prized' (Chemnitz 1998:436). Later 17th century Lutheran theologians such as Abraham Calov continued to write about conscience and natural law. Their concern was to steer a middle course between those who denied any possibility of knowing the law apart from Scripture, and those who saw such knowledge as meriting God's grace in some way (Preus 1970:179). The 17th century Lutheran treatment of natural law and natural theology was therefore 'moderate, cautious, learned, critical and exhaustive' (Preus 1970:179).

By the 20th Century a conflict began to brew between those within European Protestantism who felt conscience and natural law were still useful theological categories, and those who saw them as hewing too closely to Roman Catholic moral theology. Emil Brunner in Switzerland and Jacques Ellul in France were both more comfortable speaking of orders of creation as opposed to a 'natural law' (Bockle 1966:54). Karl Barth, the dominant figure at the neo-orthodoxy movement, denied any form of revelation apart from the Word, including some moral revelation which might come to man through his conscience.[58] Reinhold Niebuhr believed firmly that humans possessed a conscience related in some way to a divine, natural law. Yet he also expressed grave doubts about the way in which our consciences related to that law in any universally, accurate way.[59] Brunner, despite defending the reality of conscience, remains a Protestant who does see it as weak and easily deceived.[60] Likewise C.S. Lewis, the great Anglican apologist, who writes that 'law of nature or the law of oughtness... is to be distinguished from individual conscience, which is fickle and can be violated, hardened, seared or ignored' (Charles 2011b:38).

Roman Catholicism, up until the present day, continues to rely on the category of natural

58 'While individual theologians (Brunner, Althaus)...held to the idea of a universal revelation, other theologians (especially K. Barth, but also well-known Kunneth and Thielicke) refused such a distinction, at least for the time of fallen nature' (Bockle 1966:56-57). Thielicke writes that 'whether anything like the constance of ultimate norms exists' is questionable (quoted in Bockle 1966:67).

59 Niebuhr points out that 'contemporary history is filled with manifestations of man's hysterias and furies; with evidences of his daemonic capacity and inclination to break the harmonies of nature and defy the prudent canons of rational restraint. Yet no culmination of contradictory evidence seems to disturb modern man's good opinion of himself' (quoted in Strohm 2011:35). Yet he also writes that 'the divine [revealed] law... is partly coincident with the natural law, and partly transcends it as the law of man's supernatural life. 'Thou shalt not steal' is a commandment found both by reason and in revelation; 'Sell all that thou hast and give to the poor' is found in the divine law only' (Niebuhr 1951:135).

60 He writes that '"The natural ethic [for him, the conscience - ed.] says: though I may sometimes fail in my external behavior (sic), my inmost will is good. The Gospel says: though outwardly you may even do some good, yet your inmost heart is sinful' (Brunner 1970:10) and also that 'If I feel I could do right, it is a sign that I cannot do it. If I really could do it, there would be no question of 'ought' about it at all' (Brunner 1970:14).

law when pronouncing on moral issues.[61] Yet the variety of opinions on the actual precepts of natural law have led even some Roman Catholic scholars such as Alasdair MacIntyre to despair of its usefulness (Porter 1995:16). Protestantism is only now beginning to find ways in which to speak about natural law and conscience that remain faithful to the idea of justification by grace alone, through faith alone, by Scripture alone. Work by Reformed scholars such as Charles (2011) and Lutherans such as Grobien (2011) are marking these new paths.

All, however, are struggling to reconcile a few basic ideas. First, that the majority of humans have a sense of oughtness within them, in agreement with Paul in Romans 2:15. Second, that there is some limited universal agreement amongst all peoples as to what is a good act and what is to be considered abhorrent. Third, that these things are known imperfectly without the Scriptures but are revealed more fully within them.

2.8 Conclusion

From ancient Greek playwrights and Roman Stoic philosophers to contemporary Christian thinkers, the idea that people possess a conscience related in some way to an objective moral code has remained an important thought in western philosophy and theology. There has been disagreement on whether the conscience is a backward-reflecting or forward motivating. There has been disagreement on whether the natural law is a code that can be discovered through reason or merely an instinctual feeling of 'oughtness' that humans possess. But there is no question that Christians have always in some way acknowledged, like some Greek and Roman thinkers before them, the truth of Paul's insight in Romans 2:14-16.

Looking at the world, it seems clear that people are motivated by a basic sense of right and wrong. There are very basic moral principles that exist across all people groups, whether they be Christian, of some other religion, or of no specific religion at all. The prohibition against wanton killing, for example, exists among all people even if it seems to disappear in that class of people we call 'psychopaths.' A terrorist who kills scores of people with a suicide bomb does so because he believes the killings are not murder, but

61 Consider as one example John Paul II's encyclical *Veritas Splendor*, where he argues that the loss of the Church's moral authority can be traced to 'the more or less obvious influence of currents of thought which end by detaching human freedom from its essential and constitutive relationship to truth. Thus the traditional doctrine regarding the natural law, and the universality and the permanent validity of its precepts, is rejected' (John Paul II, *Veritas Splendor* 4).

justified in some way. One can justify murder in a courtroom by pleading self-defence, or even arguing that the victim 'had it coming.'

Yet while the basic principle of justice spans people groups, the details of how the principles are worked out vary, sometimes greatly. The best explanation seems to be Luther's, that while people are designed with an inborn sense of morality, nurture can greatly influence it, and it doesn't seem to connect directly with specific 'divine law' per Aquinas. The application of reason to our conscience's common sense will not lead all people to develop a code identical to the Sermon on the Mount, or even the 10 Commandments. The law written on our hearts, in other words, can accuse or excuse us; but its guidance is general, not specific.

Christians can provide an explanation for this conscience. It has a divine origin, and is a reflection left within humans of the God who originally created the first two humans in his image (Genesis 1:26). Life did not arise by accident; it finds its beginning and end in the God who has revealed Himself fully in Jesus Christ (John 1:1-3). But if one does not accept this account of creation, but accepts the Neo-Darwinian explanation for life's origins, how does one explain the conscience? That will be addressed in the next chapter.

Chapter 3: Neo-Darwinism and Conscience

3.1 Introduction

Most in the scientific community acknowledge that human beings in general exhibit what has been labelled a 'conscience.'[62] There is no ignoring that almost all humans react negatively or positively to certain behaviours even from an early age. Young children can even distinguish between behaviours that are considered socially improper, and those that ought to be deemed 'wrong' in a more general way.[63] For centuries the answer to the question of the source and basis of the conscience was sought by philosophers and theologians. As seen in the previous chapter, many in the West saw a divine origin to the conscience. But in the 19th century a new idea about the origin of life would take ideas about the conscience in a new direction.

Charles Darwin changed the way humanity thought about itself and shook some of its more cherished opinions. His ideas were so 'vast, and so threatening to man's lofty self-view, that the implications for human behavior were either set aside or ridiculed' (Wright 1998:151). In his *The Origin of Species* and *The Descent of Man*, as well as in other works, Darwin suggested that humans have a common origin with all other life on earth. One of the corollaries of that bold idea is that human behaviour is distinguished from animal behaviour not in kind but only by degree.

This chapter will explore the shift in thinking about human morality and the conscience that began with Darwin and his idea, now known as Darwinism.[64] It will start with Darwin's own thoughts on how his idea of evolution might inform our understanding of morality. A discussion of how thinking on evolution and morality progressed into the 20th century will

62 Verbeek (2006:423) describes human beings as social creatures who live 'according to a set of expectations, norms, and standards that help differentiate right from wrong and that are collectively referred to as morality.' Thomas (1997:37) describes conscience as 'the repository of a person's moral values - the thou-shalts and thou-shalt-nots of human relations.' There is a wealth of scientific literature attempting to explain general human morality, either to validate its existence (see Johnson 2013) or to dismiss it as an evolutionary leftover (Singer 2005).

63 'We now know that at an early age children understand the difference between moral principles ("do not steal") and cultural conventions ("no pyjamas at school.")' (de Waal 2006:57) and 'A young child of around, say, three years old does already have, in some sense, a good deal of moral knowledge' (Kirkwood 1990:118).

64 Evolutionary biologists now refer, technically, to the modern theory of evolution as Neo-Darwinism rather than Darwinism to distinguish Darwin's original idea from its current form. Darwin did not know about DNA, genes and genetic mutations, and how information could be inherited by one creature from its ancestors. Darwinism here will refer to Darwin's original idea, whereas Neo-Darwinism will be used when referring to the modern notion of natural selection acting on random genetic mutations.

follow. The next section will deal briefly with the history of how evolutionary thought became a minority opinion when it came to thinking on human behaviour in the mid-20th century. Last, the current ideas on how the conscience operates and how conscience evolved will both be explored.

3.2 Darwin and the Conscience

Charles Darwin came to believe that all forms of life on earth evolved from simpler lifeforms. The environment selected out forms of life better suited to thrive and reproduce, and 'weeded out' those forms of life that were less suited for survival. Darwin was not aware of DNA, genes, or the means by which information from an ancestor could be passed on to its progeny. Because of this Darwin did not make the distinction between traits that were endemic to a creature's nature and traits that were acquired by experience and, therefore, could not be transmitted genetically to offspring. His evolutionary idea came to be short-handed as 'survival of the fittest,' since it was creatures better suited to survive in an specific environment that would produce offspring and live on through their progeny. In this way over vast periods of time all life forms on earth came to have their present characteristics.

Darwin was aware that his evolutionary ideas had to line up, in some way, with the way in which creatures interact with one another. Human beings, at their best, do not seem to be in a fight with one another for survival. More often they are seen to be cooperating with each other, showing acts of selflessness even to the point of self-sacrifice, and looking after those who seem ill-suited to survival in a given environment. In his work *The Descent of Man* Darwin gives suggestions as to how what he calls human 'social virtues' might have evolved. He ties these social virtues to basic human sympathy.[65] At some point in the ancient past the ancestor of humans and, perhaps, other mammals, gained a set of traits that pushed them in general towards virtuous and away from vile behaviour.

65 'Darwin offered the additional and crucial insight that sympathy evolved (perhaps from a basic sense of others) as the most likely precursor of the specific emotions that sustain our morality' (Verbeek 2006:443). In Darwin's own words (1871:164), 'there is another and much more powerful stimulus to the development of the social virtues, namely, the praise and the blame of our fellow-men. The love of approbation and the dread of infamy, as well as the bestowal of praise or blame, are primarily due, as we have seen in the third chapter, to the instinct of sympathy; and this instinct no doubt was originally acquired, like all the other social instincts, through natural selection.'

Darwin speaks of three forces that could have forced this development. First, there was the desire to have the praise and eschew the blame of others in a group.[66] Such creatures were no longer fully autonomous, uncaring of the pain or pleasure that their actions caused others. They could be influenced by outward 'social' pressure. Second, some human ancestors began to see the value in aiding others, in order that they in turn may be aided at some point in the future.[67] This was the beginning of a form of reciprocal altruism, an idea that will appear in almost all later theories of the evolution of human conscience. Third, there was natural selection of groups that could work together, with groups that could not coalesce into sympathetic teams being 'selected out,' unable to survive as well in the environment.[68]

Although Darwin had these initial ideas about how social virtues came to exist within each human and within a human society, he still recognized how improbable the evolution of these virtues must have been. He recognised that the support of the weak and infirm by stronger, healthier members of the race should result in a weaker, not stronger, species.[69] He felt himself torn between the noble idea of sympathy for the weak, and how that very care seemed to work against the strengthening of humanity as a race. If nature was not allowed to select out the weaker members of the species, how could that species continue to evolve? This conundrum for the supporters of both accepted human morality and Darwin's concept of evolution remains, as will be seen in subsequent sections.

66 'At how early a period the progenitors of man, in the course of their development, became capable of feeling and being impelled by the praise or blame of their fellow-creatures, we cannot, of course, say. But it appears that even dogs appreciate encouragement, praise, and blame' (Darwin 1871:164).

67 'As the reasoning powers and foresight of the members became improved, each man would soon learn from experience that if he aided his fellow-men, he would commonly receive aid in return. From this low motive he might acquire the habit of aiding his fellows; and the habit of performing benevolent actions certainly strengthens the feeling of sympathy, which gives the first impulse to benevolent actions' (Darwin 1871:163-164).

68 'When two tribes... came into competition, if the one tribe included...a greater number of courageous, sympathetic, and faithful members, who were always ready to warn each other of danger, to aid and defend each other, this tribe would without doubt succeed best and conquer the other' (Darwin 1871:162).

69 There is a lengthy passage to this effect in *The Descent of Man* (Darwin 1871:168-169). A portion of this passage was quoted by Ben Stein in his documentary *Expelled: No Intelligence Allowed* (Stein 2008): 'No one who has attended to the breeding of domestic animals will doubt that [caring for the imbecile, maimed , sick and poor] must be highly injurious to the race of man' (Darwin 1871:168-169). Neodarwinists have argued that this quote is incomplete, and that Darwin in fact praised human social virtue later on: ' Nor could we check our sympathy, if so urged by hard reason, without deterioration in the noblest part of our nature' (Darwin 1871:169). Yet the passage ends with Darwin (1871:169) opining that for the sake of sympathy we 'must bear without complaining the undoubtedly bad effects of the weak surviving and propagating their kind.'

3.3 Conscience and Early Darwinism

Darwin's concepts of 'survival of the fittest' and common ancestry were quickly picked up by others, who also recognised that evolution would seem to work against, rather than for, the development of human conscience. Among those who developed Darwin's idea and attempted to reconcile it with moral behaviour were Francis Galton (Darwin's first cousin), Julian Sorely Huxley (grandson of Thomas Huxley, a friend of Darwin's), and George Gaylord Simpson, who with Huxley helped establish the modern evolutionary synthesis.

3.3.1 Francis Galton

Francis Galton (1822-1911) was a great admirer of Darwin's idea of natural selection (Gottlieb 2001:48). He is also known, perhaps infamously, as the father of eugenics (Wright 1998:158). He would not be the first to use Darwin's evolutionary model in service of ideas that are now found to be morally repugnant.[70] This gives an idea of how quickly Darwin's 'survival of the fittest' began to impact thinking about what is right and ethical, and to shape consciences in a new way. It was not long between the rise of Darwinism and the beginnings of so-called 'Social Darwinism' (Ruse 1999:198).

One of Galton's chief interests was how humans came to think and act the way they do, if Darwin's suppositions about human origins are correct. In his *Inquiries into Human Faculty and Its Development,* published in 1883, Galton 'introduced the study of twins as the method par excellence of distinguishing between the effects of nature and nurture' (Gottlieb 2001:55). He wanted to be able to demonstrate that although twins may be raised in different environments, their same basic nature would lead them to behave in similar ways. He believed firmly that nature shaped conscience more surely than did nurture (Gottlieb 2001:55).

Galton, then, was the first to write openly that human conscience is a function of physiology and not culture or upbringing. This idea would be developed for a few decades before it became a minority view, not coincidentally around the time of the Second World

70 'Some pretty dreadful things have been suggested and sometimes even perpetrated in the name of evolution.' Examples named by Ruse include militarism and fascism (1999:198).

War.[71] It would be almost a century until this idea came to dominate thinking about the conscience from a scientific point of view.

3.3.2 Julian Sorely Huxley

Julian Huxley, along with George Simpson, was a major proponent of what is now known as modern evolutionary theory (Ruse 1999:201). His grandfather was Thomas Huxley, often referred to as 'Darwin's Bulldog' for his support of Darwin in public debates. It was this Huxley who, at Oxford in 1893, suggested that human ethics was 'a victory over an unruly and nasty evolutionary process' (de Waal 2006:7). In other words, 'what makes us human could not be handled by evolutionary theory' (de Waal 2006:7). He was willing, then, to accept Darwin's proposals but had difficulty with the idea that humans were not in any way qualitatively different from other animals.

Although an atheist, Huxley still wanted to make sense of life as something more than a material, brutish existence (Ruse 1999:201). What he ended up believing in was the idea of progress, that living organisms were getting 'better.' What he needed was a natural criterion, in agreement with Darwinism, for what constituted something more improved than something else. He decided on complexity and control as that criterion. The more complex an organism, and the more control it could exert over its environment, the more advanced was that organism.[72] Julian Huxley argued that 'because evolution was progressive and because progress meant that value was ever increasing, humans had a moral obligation to cherish and promote the evolutionary scheme of things' (Ruse 1999:206). He believed that only humans were continuing to evolve, and that their evolution could (and should) be planned (Ruse 1999:206).

What all this meant was that, for Huxley, progress was the highest value and the continued evolution of the human race the only virtue. In Huxley's words, 'it is ethically right to aim at whatever will promote the increasingly full realization of increasingly higher values' (Huxley quoted in Ruse 1999:206). Thus Huxley, like Galton, supported programs of eugenics but

71 Darwin's insight "was wrenched into the service of reactionary systems such as Social Darwinism (if you are poor it is because you were born to be poor), eugenics (stop the unfit from propagating) and Nazism (eliminate the unfit already here.). Because of these bogus and pre-emptive applications of inheritance theories, the entire subject of genes and human behavior was stigmatized with ugly ramifications that linger today' (Wright 1998:13). Writing in 1998, Wright points out that only in the late twentieth century with 'findings about the gene-behavior dynamic' would the dominance of nurture over nature 'upon which fifty years of psychological theory has been based' be overturned (Wright 1998:7).

72 Ruse writes that 'Huxley saw humans as right at the pinnacle of being.' Humans enjoy 'increased control over and independence of the environment' (Huxley quoted in Ruse 1999:201).

also programs encouraging biodiversity (Ruse 1999:208). Huxley's acceptance of evolution as a fact led him to believe evolution was also an 'ought.' He felt that only those who truly understood this reality ought to govern the course of human affairs.[73]

3.3.3 George Gaylord Simpson

George Gaylord Simpson identified the weakness in Huxley's ethical thinking, that the 'is' of evolution necessarily led to 'ought' prescriptions of behaviour. Like Huxley, Simpson believed that humanity was the most well-evolved of all the earth's lifeforms based on certain criteria.[74] He also believed that humans did not excel in all of his criteria for which species were most progressive; in this he differed from Huxley. He was more interested in the human conscience beyond the simple idea that 'right' is whatever leads to progress in human development (vis Huxley; see Ruse 1999:214). He therefore wrote more extensively on the question of ethics.

Simpson, for example, saw ethics as more than an overall program to be directed by the scientific community. Each individual possessed a conscience which directed them towards certain actions and away from others. This sense of the moral was certainly itself the result of evolution and entirely natural. But knowing where it came from did not mean it could be ignored.[75] Most humans have a sense that other individuals have a right to exist, and that this right ought to be upheld. The degree to which that right to existence manifests itself in individuals or in a societal unit is the result of 'human choice and responsible action for either good or evil' (Simpson quoted in Ruse 1999:214-215). Simpson was a prominent backer of the new evolutionary synthesis now known as Neodarwinianism, and certainly saw ethics as arising naturally and having no 'divine' origin. Yet he was willing to speak of 'human choice' and 'responsible action' and was not willing to reject all ethical or unethical behaviour as the mere product of deterministic forces.

Galton, Huxley and Simpson all understood that Darwinism and its later forms had

73 As he describes in his 1934 book *If I Were Dictator* (Ruse 1999:205).

74 Simpson added specialization, potential for future development, independence from the environment and dominance to Huxley's criteria of complexity and control to evaluate what species was 'dominant' (Ruse 1999:213).

75 Simpson writes that humans have a sense of responsibility which 'is basically personal and becomes social only as it is extended in society among the individuals composing the social unit. It is correlated with another human evolutionary characteristic, that of high individualization. From this relationship arises the ethical judgment that it is good, right and moral to recognize the integrity and dignity of the individual' (Simpson quoted in Ruse 1999:215).

profound implications for ethics. Galton was willing to consider a new ethical framework based on Darwin's understanding of the 'survival of the fittest,' leading to his support of eugenics in some form. Huxley believed that science and scientists were best suited to guiding a society's ethics. In his case, ethical decisions meant those that would further the progress (evolution) of the human race. Simpson was unwilling to ignore the individual conscience, seeking to explain the existence of a sense of right and wrong as the result of evolutionary processes and remaining a 'good and right' thing to foster. Others in the late 19th century such as US doctor Benjamin Rush and German psychiatrist Emil Kraepelin believed that many mental disorders had physiological, not psychological, causes (Wright 1998:148). They all saw Darwinism as giving a materialistic explanation for things that had previously been relegated to the realm of an ethereal mind or soul. But the use (some would say misuse) of evolutionary theory by groups such as the Nazis led research on ethics in a new direction by the mid-20th century.

3.4 Conscience and Neo-Darwinism

Just as Huxley, Simpson and others were completing their work on the new evolutionary synthesis, the study of ethics and the conscience tipped away from the study of nature and toward the study of nurture. As mentioned earlier the effects of the Second World War led some to reject the more radical forms of Social Darwinism and find a basis for ethics in science and reason, rather than in religious belief. For more than half a century what would be called 'environmentalism' or 'behaviourism' would dominate the discussion on the function of the human conscience.[76] Psychoanalysis, pioneered by Sigmund Freud, gained ground while the ideas of Darwin and his early followers on the topic were neglected (Wright 1998:156).

One of the researchers who helped pursued many that morality was a learned behaviour and not in any way written into our nature was Margaret Mead. She was a student of Columbia University professor Franz Boas, who believed that 'biological processes were separate and distinct from culture and could only be turned to for explanations if the cultural possibilities had been thoroughly explored and rejected' (Wright 1998:160).

76 'For nearly two-thirds of the twentieth century, almost none of the serious thinkers on the subject (of human behavior) believed our behavior was in any way inherited' (Wright 1998:154). In Wright's view, it was the (at least temporary) victory of nurture over nature in academia on the subject of human morality (Wright 1998:94). 'The psychological study of moral development has undergone a major transformation over the past several decades. The field has expanded greatly...to consider current developments in other areas of psychology, including social psychology, cognitive psychology and the neurosciences...' (Killen and Smetana 2006:1).

Margaret Mead's work 'is now seen by most scholars as a scientific embarrassment along the lines of the Piltdown man hoax' (Wright:1998,163). It was not officially debunked until 1983 by Derek Freeman, at a time when links between behaviour, morality and genetics were gaining ground once more. Where Margaret Mead sought to establish, through faulty research, was the differences in mores between one culture and the next. Researchers have now seen quite the opposite, recognising 'the vast number of similarities that run through every culture- in incest taboos, altruism, and religiosity are three of the most frequently cited' (Wright 1998:164).

Mead and Freud were not the only ones championing nurture over nature in academic circles on the question of human moral thoughts and behaviour. Others included John Watson who, in the 1920s, launched what would be known as the behaviorist school of psychology. This school would later be championed by B. F. Skinner. This school 'denied the importance of inherited traits, claiming instead that the primary determinants of behavior were early learning and conditioning' (Wright 1998:166). This school held sway until advances in genetic research – especially and ironically the study of twins first proposed by Galton – could no longer be denied, and when work such as that done by Mead was shown to be defective if not fraudulent.

Now the scientific community has swung much the other way, so that 'the biological-genetic perspective has now established itself in universities throughout the country and, more and more, with the public' (Wright 1998:17). This is not to say that geneticists now have the only word. Research still shows that nurture plays a significant role although not in isolation from nature.[77] But in recent years, more so than in the mid-20th Century, much work has been done exploring, first, the role physiology and especially genetics may play in the almost universal presence of the human conscience and, second, how such features may have evolved by natural selection acting on random genetic mutations. The next

77 For example Murray, who writes 'children raised in cohesive traditional societies have an easier time learning common sense values and reaching moral decisions than do children who grow up in environments that confront them with a wide array of competing beliefs' (1997:43), and Daly and Wilson who write regarding the nature-nurture fallacy that 'one might just as we'll ask whether hemoglobin or air is more essential to human survival' (quoted in Wright 1998:147-148). Yet others point out that 'a young child of around, say, three years old does already have, in some sense, a good deal of moral knowledge' (Kirkwood 1990:118). The implication is that this knowledge must be innate, for there cannot yet have been time to acquire it from the environment. So Rutter is correct when he writes that 'critics of behavioral genetics have cast scorn on the apparent absurdity of the idea that there could be genetic influences on behaviors that are manifestly social, such as crime, divorce and homosexuality... Of course, it is the case that there is not, and could not be, a gene for any of these behaviors, but individuals do vary in their propensity to show these behaviors and insofar as that is the case, there is every reason to suppose that genetic factors will be implicated' (Rutter 2006:12).

sections will explore these two areas of research.

3.5 How Conscience Might Work

In recent decades research has turned back to the human body and neodarwinian explanations for the existence of the human moral compass. This research has focused on several of the body's systems, especially human genetic make-up and brain function.[78] There is certainly a widespread belief in the scientific community that human genetics and brain structure plays some role in human morality. But most scientists agree that genes themselves cannot be held responsible *in toto* for human behaviour.[79] The subsequent section will explore how research on the connection between human genes and the human propensity for moral behaviour is being carried out.

3.5.1 Searching for a Heritable Basis for the Conscience

There is, first of all, a search for specific genes that may be responsible for directing human actions, inclining humans to some actions and disinclining us to others. There is agreement that behaviour is influenced by our genes.[80] But no one has suggested that there exists something as simple as a 'conscience gene.'[81] What scientists are searching for is a set of genes that underlay structures in humans and other social mammals that cause what is seen as moral behaviour.

Every living organism on earth has a *genotype*, or a set of 'inherited instructions' expressed in our genes. It is a mistake, however, to think that this genetic code is responsible for everything about a person or creature. A creature's genes are not completely responsible for that creature's *phenotype*, the set of all of a creature's observable characteristics and traits. Nonetheless most research on the genetic basis of conscience has involved searches for specific genes and their *alleles*, or the mutations of

78 Hastings et al (2006:504) mention research on the human neuroanatomical, neurophysiological, neuroendocrine, and autonomic systems, all of which are influenced by a person's genetic makeup.

79 Even Dawkins (1999:11), traditionally a huge supporter of genetic determinism, writes that the environment may in fact have an impact on our behaviour and not simply our genetics, leaving open a role for nurture in the development of the conscience.

80 'The fact that differences in male and female aggressive behavior are so uniform across so many different mammalian species makes it highly likely that the difference has a genetic basis' (Clark and Grunstein 2000:160).

81 Consider Clark and Grunstein (2000:38): 'Very few, if any, behaviors are the product of a single gene,' and Rutter quoting Kendler (2006:13): "Kendler (2005) firmly states that the strong, clear and direct causal relationship implied by the concept of 'a gene for' does not exist for psychiatric disorders' much less for the complicated process of moral decisions.

certain genes, which would account for moral behaviour (Clark 2000:33-34).[82]

There are a number of ways that a genetic basis for moral behaviour could be teased out. The first is direct investigation of the genetic structure of individuals in an attempt to isolate specific gene functions. One way to do this is through the candidate-gene approach. A research team hypothesises that a certain gene may be responsible for a very specific behaviour, usually an addictive one (Morris-Martin et al 2012:652). They then investigate that specific gene through studies. The upside of this form of research is that it narrows the field of study from the more than 25,000 genes in the human genome to one specific gene or set of genes. The downside is bias, since there is a tendency to want to 'prove' one has found the right gene to begin with (Morris-Martin et al 2012:652). A second approach is to use 'genome-surveillance.' This approach, while less biased, is much more difficult to execute.[83]

A second approach is an indirect, macro-level investigation, one first proposed by Darwin's cousin Galton. This is to use twins or adopted siblings (Rutter 2006:41). Identical twins share the same DNA, and so genetic differences can presumably be ruled out when studying differences and similarities in behaviour between the twins. Some studies have shown between a 40% and 70% contribution of heredity to the self-reported pro-social behaviour of twins (Hastings et al 2006:489). This does not mean scientists are any closer to finding a gene or gene sequence for the conscience. The role of epigenetics is only now being more fully explored and so, while the DNA may remain the same in the case of identical twins, there are still epigenetic differences which must be taken into account.[84]

Third, the structure of the brain itself and the chemicals and hormones which influence the brain's behaviour are being investigated (Hastings et al 2006:491, Singer 2005). These sorts of studies begin with the brain's structure and the chemistry that drives its function, hoping to later identify the specific genetic and epigenetic factors behind them. These studies have focused on the function of hormones such as testosterone (Edsten and

82 Recently, however, the field of *epigenetics* has opened up new avenues of research. Epigenetics is the study of changes in gene function which can be passed from one creature to its offspring, but which are not observable in the DNA itself. This means that some heritable traits are not reducible to specific alleles of the genes (Allis et al 2007:16). 'In the words of others, 'We are more than the sum of our genes'...or 'you can inherit something beyond the DNA sequence. That's where the real excitement in genetics is now' (Allis et al:2007,25).

83 'Nearly 1500 [genes] have been implicated in some way in addiction' (Morris-Martin et al 2012:652).

84 'Even twins such as these can exhibit outward phenolic differences, likely imparted by epigenetic modifications that occur over the lifetime of the individuals. Thus, the extent to which epigenetics is important in defining cell fate, identity, and phenotype remains to be understood' (Allis et al 2007:25).

Richerson 2007), the role of pheromones (Clark 2000), chemicals such as oxytocin (de Waal 2012), and the role of autonomic systems (Hastings et al 2006). This sort of research is arising out of the realisation referred to earlier that conscience and moral behaviour is likely not driven by a single gene or even a simple set of genes.

A fourth means whereby researchers have sought to tease out a possible heritable source for conscientious behaviour in humans is to study the animals which, according to Neo-Darwinism, would be the nearest relatives to humans. Presumably the closest animals to humans on the evolutionary tree of life should exhibit similar types of moral behaviour to human beings. This has shown by some to be the case, especially when studying monkeys, or great apes such as bonobos and chimpanzees.[85] The assumption is that, if humans' closest relatives exhibit behaviour similar to humans, then evolution may have selected for that kind of behaviour in an earlier common ancestor and preserved it in some heritable (genetic or epigenetic) way.

3.5.2. What the Research Has Found

Using the techniques mentioned above – gene identification, twin studies, analysis of brain function, and animal studies – some advances have been made in the attempt to find the genetic basis for human moral behaviour. There has been limited success in identifying heritable reasons for aberrant human behaviour and addictions. Some physiological processes have been identified which may influence aggression and immoral behaviour, and others which seem closely related to good behaviour. The structure of the brain is now more fully understood, as are the chemicals which can influence the decision-making processes. Research done with animals considered by evolutionists to be close relatives has also yielded interesting results. All these will be explored below.

There does seem to be a genetic basis for certain specific mental disorders. These would include, for example, schizophrenia as well as Attention Deficit Hyperactivity Disorder (ADHD).[86] This does not mean specific genes for these mental illnesses have necessarily

85 So de Waal, who has done extensive research of this type (De Waal 2006, 2012). In one case de Waal observed that Rhesus monkeys would refuse 'to pull a chain that delivers food to themselves if doing so shocks a companion. One monkey stopped pulling for five days, and another one for twelve days after witnessing shock delivery to a companion' (de Waal 2006:29). De Waal also contrasts the behaviour of bonobos and chimpanzees, arguing that human behaviour is closer to the former and not the latter: 'Whereas [the chimpanzee's behaviour] is marked by xenophobia, the [bonobo] is relatively peaceful and highly empathic in both behavior and brain organization' (de Waal 2012:874).

86 'Some mental disorders (especially schizophrenia and autism but probably also bipolar affective disorder and ADHD) are strongly influenced by genetic factors, with heritability ranging in the 60 to 90 percent range' (Rutter 2006:81).

been discovered, but research has shown that a predisposition to them has been inherited and not acquired. There is also a genetic predisposition to certain forms of addictive behaviour. However this does not mean, again, that a 'gene' for alcoholism or drug-abuse has been identified. It simply means that certain alleles together may be responsible.[87] The dopamine D2 receptor gene (DRD2) may play a stronger role than other genes when it comes to both addictions and, possibly, altruistic behaviour.[88] But this work has not been definitive.

A variety of other genetically-related processes within the brain have been put forward as shaping moral behaviour. These include the serotonergic systems often linked to depression and anxiety (Hastings et al 2006:490). Low levels of serotonin are sometimes linked to impulsive, though not premeditated, aggression (Clark and Grunstein 2000:169). But that link between depression, anxiety, aggression and levels of serotonin is still poorly understood (Clark and Grunstein 2000:149). The role of oxytocin in shaping what is called conscience is also being studied. This chemical seems to play an important role in 'parental care, mate attachment, and affiliative behaviors by both males and females' (Carter quoted in Hastings et al 2006:496). Pheromones have also been proposed as playing a role in human behaviour, but here again the science has not shown 'to what extent humans normally communicate through pheromones in their daily lives' (Clark and Grunstein 2000:56).

Because evolutionary theory has linked the origin of moral behaviour to reproduction, hormones related to sex drive and mating (and chemicals such as the aforementioned oxytocin) are often singled out for study. Testosterone seems to play some role in aggressive behaviour, for example (Clark and Grunstein 2000:165). But again a direct correlation between levels of testosterone and aggression has yet to be established (Clark and Grunstein 2000:167).[89]

87 'Genes mapped to 11 of our 23 chromosomes are implicated in single-drug addiction or, in some cases, addiction to multiple substances' (Morris-Martin et al 2012:652).

88 'The dopamine-receptor encoding gene, D2DR, has been strongly implicated in a complex trait referred to as “reward deficiency syndrome”' (Morris-Martin et al 2012:652). 'One study targeted the dopamine D2 receptor gene (DRD2), but this did not seem to show positive correlation with altruism' (Hastings et al 2006:490).

89 Consider a study done by Hauser reported in Edsten and Richerson (2007:82), which 'compared white American men from Northern states with counterparts from the South, a study that Hauser discusses in some detail. When the subjects were exposed to a mild insult, the Southerners showed a greater willingness to react violently; a difference that is presumably cultural. But the experiment also revealed that testosterone and cortisol levels spiked in the Southerners. Thus their more violent responses, which clearly have a cultural basis, seem every bit as automatic as the snap judgments Hauser uses as evidence of innate moral capacities.' In other words, simply identifying a change in hormone or chemical

Brain research takes a broader view than a focus on specifics genes, chemicals or hormones. This research has identified certain parts of the brain which seem to play unique roles in the shaping of moral decisions. Many studies have attempted to identify the role the parts of the brain responsible for emotional, or instinctual, reactions play in moral decisions as opposed to the parts responsible for more reasoned, rational thought. Scientists have hoped to identify which of the two plays a more dominant role in moral decision making, or whether both must act in concert. It is further assumed by those subscribing to evolutionary theory that instinctual reactions are the result of earlier evolutionary stages, while the capacity for rational thought developed more recently and may be unique to humans.

Instinctual reactions and the emotional governance systems in the brain are believed to be tied together. These instinctual systems include the 'anger-rage, anxiety-fear, and separation-panic' mechanisms which are shared by all mammals (Hastings et al 2006:486). In fact these primal systems are shared by higher-order animals outside of mammals as well.[90] Some evolutionary ethicists believe these instinctual, emotional and primal systems play an important role in human moral decision-making.[91] Others agree that these more basic and earlier evolved systems play a role, but only in conjunction with the higher order reasoning which takes place in the pre frontal cortex.[92] Still others have argued that reasoning centres of the brain play the most significant role and believe the role of emotional reaction systems are being overstated.[93] The conclusion so far seems to be that, just as the whole genome and even epigenetic traits are responsible for phenotype and not just one gene, so too is the whole brain involved in moral decision making in some way.

---

levels in an individual does not obviate the effects of the environment.

90 'Physiological and psychological causes of [our primal] desires come from the limbic system, an ancient part of the brain that we share with pigs, rats and lizards' (Johnson 2013:173).

91 University of Virginia psychologist Jonathan Haidt has shown that 'moral judgments in a variety of areas are typically the outcome of quick, almost automatic, intuitive responses. Where there is more deliberate, conscious reasoning, it tends to come after the intuitive response, and to be a rationalization of that response' (Singer 2005:338). Hauser agrees, writing that 'when our emotional systems fail, so too do our moral distinctions' (Hauser 2013:265).

92 Thus Paul MacLean, pioneer of the 'triune brain theory,' who 'emphasized the role of systems in the prefrontal cortex as well as the limbic system, with neural interconnections that may enable an individual to feel one's way into another person in the sense of empathy' (Hastings et al 2006:487).

93 So Johnson (2013:173) writes of the 'cool headed rational calculations that allow us to restrain selfish desires' which come, he notes, from the neocortex. Hauser (2013:216) also remarks on studies which have shown that 'patients with frontal lobe damage have shown difficulty in their ability to integrate the social emotions into socially relevant decisions, including moral decisions.' Singer (2005:339), too, concedes that 'brain-imaging studies have found a correlation between anti-social behavior and a deficiency in either the size of, of the amount of metabolic activity in, the prefrontal cortex.'

When it comes to animal research, however, there is a tendency to downplay the role of reasoning, since it exists only in a primitive way in non-human species. Instead there has been a desire to find moral traits in close evolutionary relatives which resemble those exhibited in humans as well, and then find an explanation through common hereditary traits. It was Edward Westermarck, a Swedish Finn who worked in the late 19th and early 20th century, who first took this approach (de Waal 2006:17).[94] De Waal has done much work with Bonobos, a member of the great ape family. While humans are often thought to be similar to Chimpanzees, de Waal argues that humans exhibit more similarities, in terms of moral behaviour, to this other species of ape. Bonobos tend to be much less aggressive than Chimpanzees, for example. De Waal believes this is because Bonobos have 'more gray matter in brain regions involved in the perception of distress, including the right dorsal amygdala and right anterior insula, and a better developed circuitry for inhibiting aggression' (de Waal 2012:875). Hauser has also done much work with monkeys, who have high tendency to cooperate rather than act selfishly.[95] The implication drawn by those who do research with animals is that the human conscience is the result of natural selection for ancestors who showed an ability to empathize with others.[96] They therefore downplay the role of human reasoning in the moral decision making process, since this process does not exist among lower order species.

3.5.3. The Limits of the Science

Whether the research involves the search for a specific gene or set of genes that give rise to morality, animal research, or other quests for a hereditary basis for conscience, many scientists have a fundamental belief that nature somehow trumps nurture, even if the evidence of this is not yet concrete.[97] But the optimism some might have felt of finding a

94 De Waal connects Westermarck with earlier moral philosophers and theologians, remarking that he is part of 'a long tradition, going back to Aristotle and Thomas Aquinas, which firmly anchors morality in the natural inclinations and desires of our species' (de Waal 2006:18).

95 'Individual monkeys who emit distinctive calls that announce a food discovery suffer far fewer aggressive attacks, such as chasing, hitting, and biting, than monkeys who remain silent but get caught with food by other group members, Hauser contends' (Bower 1992:423).

96 De Waal (2006:18) argues that 'people can reason and deliberate as much as they want, but, as neuroscientists have found, if there are no emotions attached to the various options in front of them, they will never reach a decision of conviction,' and 'human morality is firmly anchored in the social emotions, with empathy at its core. Emotions are our compass' (de Waal 2006:56). De Waal is convinced that species that demonstrate an ability to empathise will cooperate and therefore survive and thrive. Therefore humans and their animal relatives have evolved to have a moral compass, something that exists within the fundamental genetics of humans and species such as the Bonobos.

97 Hauser (2013:263) is typical of this belief: 'If one looks at the kinds of psychological distinctions people make when judging moral dilemmas, these distinctions often play no role within a given religious doctrine, or more importantly, do not play a role across all of the religions sampled. If the moral decision making doesn't come from religion, perhaps biology hands off, to all human beings, a set of principles for

'gene for morality' is being replaced with the more sober realisation that the reality is more complex. Certainly any idea that all moral behaviour can be reduced to pure genetics is losing ground. If the mid-20th century was the era of behaviorism, and the turn of the 21st century was the era of genetic determinism, the present seems to be returning to a balance in the nature versus nurture debate.[98]

R.C. Lewontin remarked in his book *Biology as Ideology* that 'it takes more than DNA to make a living organism...(an) organism does not compute itself from DNA. A living organism at any moment in its life is the unique consequence of a developmental history that results from the interaction of and determination by internal and external forces' (1992:63). While this statement may have been controversial when first made, it is not so any more. Most of the current research takes pains to recognise that while nature may 'dictate the principles,' it is nurture that controls the parameters (Edsten and Richerson 2007:82). Clark (2000:265) recognises that 'genes and previous experience contribute... roughly equally to the variability we observe in the way humans behave.' Edsten and Richerson (2007:82) write that while 'the genetic influences on morality are subtle, the raw power of culture is apparent.' Or consider the verdict of Morris-Martin et al (2012:653): 'Although genetics can predispose a person to addiction, it is irresponsible to imagine that a person can reasonably “blame” genes for addiction. Similarly, a person with predisposing alleles should not despair that addiction is inevitable.'

The inevitable conclusion is that the interplay between nature and nurture remains a complex one to evaluate. Genes and epigenetic factors may determine the shape and structure of the brain, as well as levels of hormones, pheromones and other chemicals. But the brain is programmed by input received from its environment. It may be predisposed to certain behaviours, but those behaviours can still be encouraged or discouraged. In the words of Edsten and Richerson (2007:82), 'Apportioning responsibilities among genes, culture and individual learning is a daunting task that requires dissecting the complex developmental trajectory of an organ, the brain, whose

navigating within the moral domain, and these principles provide the building blocks for creating explicit moral systems.'

98 Rutter, hardly a behaviourist, is emphatic on this point, stating that "none of the findings are in the least bit compatible with a genetically deterministic view' (2006:89). He believes that 'genetic influences may lead people to be more or less emotional in their functioning, more or less impulsive in their style of reacting, more or less sociable and outgoing in their personality, more or less stable or labile in their mood, and more or less aggressive in their interpersonal relations' and that 'it would be a mistake to see these traits as simply features of the mind' (2006:83). Yet the 'quantitative evidence is clear cut and consistent in indicating that the individual variation in virtually all traits is influenced by both genetic and non-genetic factors' (2006:84).

operations are difficult to observe.' A poorly constructed vehicle may be more susceptible to rust than a well-constructed one. But the environment in which it operates will determine whether it rusts out or not.

3.6 How Conscience may have Evolved

Having presented some of the current thinking on how the conscience might operate, this section will consider theories as to how the human race evolved moral sensibilities. The primary obstacle to be overcome, theoretically, is to explain why natural selection would seem to favour what would be considered selfless behaviour over and against selfishness, which would seem to have better survival value. This is the conundrum of connecting 'other-oriented sacrifices and apparent good deeds with individual fitness' Verbeek (2006:424)[99] Evolutionary theories for the origin of conscience have tried to resolve the conundrum by focusing on kin selection, reciprocal altruism, and group or so-called 'green beard' selection.[100] These possible reasons for the existence of moral behaviour have been evaluated directly through observation but also indirectly through the use of 'game theory,' a branch of mathematics that concerns evaluation of beneficial choices in set situations.[101] 'Game theoretical results delineate evolutionary constraints that are critical in resolving the problem of cooperation' (Hauert 2013:128).

3.6.1 Kinship, Reciprocal Altruism, and Group Selection

One possible origin of moral behaviour involves the evolution of a propensity to protect one's kin. William Hamilton first proposed this idea in the 1960s, suggesting there was a survival benefit to helping a 'close relative, even at risk to self, because relatives share a certain percentage of alleles' (Verbeek 2006:425). J.B.S. Haldane famously colloquialized 'Hamilton's Rule' as meaning 'I will jump into a river to save two brothers or eight cousins'

99 Consider also Tomasello et al (2012:673): "As compared with other primates, human beings are inordinately cooperative, especially with nonrelatives. As is well known since Darwin, this creates challenges for evolutionary explanation, since in modern evolutionary theory, cooperative behavior must always be grounded in the individual and inclusive fitness of the cooperator.'

100 The green beard effect, as explained by Dawkins, is the possibility that an organism recognises 'a desirable trait or program in other' and therefore will assist that individual as a means of indirectly preserving itself (Dawkins and Dennett 1999:146).

101 'Von Neumann and Morgenstern (1944) developed game theory to test resolutions of social dilemmas. Axelrod (1981) famously developed the “Prisoner's Dilemna,” which remains one of the most famous of game theory scenarios' (Hauert 2013:116). In the dilemma two individuals are each arrested and placed in separate cells. If neither confesses, both will be released. If one confesses, she will receive two years jail but the other five years jail. Another scenario considered more likely to explain the evolution of altruism is the Continuous Snowdrift (Hauert 2013:118). In this scenario, two cars are stuck in a snowdrift. If both drivers shovel, they both get home sooner. If neither shovels, neither moves. One can also shovel while the other does not.

(Nowak 2013:100). To put it in a more scientific way, it means that the more genes are shared among a kinship group, the more likely they are to 'help' one another even at the cost of an individual's chance of survival (Hastings et al 2006:484). Dawkins and Dennett (1999:155) see this as the most viable explanation for 'conscientious behaviour.' In fact Dawkins questions the need for what he calls 'sloppily unconscious group-selectionism' (Dawkins and Dennett 1999:6).

Kinship concepts still do not explain why an individual might sacrifice him or herself for someone who is not related. In the 1970s Robert Trivers suggested reciprocal altruism as another method whereby one's survival might benefit by helping others, even those who are not related genetically (Verbeek 2006:425).[102] This reciprocity might be direct, indirect, or via a network (Nowak 2013:102-104). Direct reciprocity is a 'tit for tat' solution to the prisoner's dilemma in game theory. The prisoners help each other because it is in each other's best interests to do so. However it is still difficult to see how natural selection would select for this kind of behaviour. Classic evolutionary theory suggests that nature selects individual sets of genes, not groups.[103] Indirect reciprocity would seem to be a way around this problem. Those who have a tendency to help others would tend to be helped in turn. The individual who is genetically disposed to help others will in turn be helped, and therefore more likely to survive and reproduce (Nowak 2013:102). The idea of indirect reciprocity led some to the idea of network reciprocity, where an entire group may be better fitted to survival if cooperation within the group if favoured (Nowak 2013:104).

Network reciprocity has expanded into the idea of group selection, something referred to as the Green Beard hypothesis (Nowak 2013:110, Dawkins and Dennett 1999:146).[104] The idea is that, at least in game theory, selfish individuals always fare better than selfless ones, but cooperating communities always fare better than selfish agents (Hauert 2013:115). It has long been asserted that 'a variety of physical, demographic, and psychological attributes that connote familiarity or familial bonds - including appearance,

102 Reciprocal altruism is also sometimes called the Big Mistake Hypothesis, since it is assumed to have developed out of organisms who 'mistakenly' helped non-kin to survive (Tomasello et al 2012:673).

103 Dawkins is especially suspicious of natural selection working on groups rather than individuals or, in their thinking, sets of genes generating specific phenotypes. 'The intervening years since Darwin have seen a astonishing retreat from his individual-centered stand... We painfully struggled back, harassed by sniping from a Jesuitically sophisticated and dedicated Neo-group-selectionist rearguard, until we finally regained Darwin's ground, the position that I am characterizing by the label “the selfish organism,” the position which, in its modern form, is dominated by the concept of inclusive fitness' (Dawkins and Dennett 1999:6).

104 The hypothesis is that some outward, arbitrary indicator may have led organisms to act altruistically to others with the same outward indicator – 'green beards' helping one another, for example.

religious affiliation, socioeconomic status, abilities, attitudes and personality' (Hastings et al 2006:486) has led to altruism and moral behaviour. This would be a link between altruism between kin and group cooperation – the concept of 'kin' expanded beyond simple hereditary factors. This theory of network reciprocity or group selection is also sometimes called the Cultural Group Selection Hypothesis (Tomasello et al 2012:673).

3.6.2 Difficulties Yet to be Overcome

Despite the research that has been done, from gene searches to game theory computational models, many questions remain. The most basic question is the one asked by Korsgaard (2006:113): 'Is morality tied to self-consciousness, and is that something unique to humans?' Is morality simply a genetic disposition to be kind to our kin (or kin-like neighbours) in order to promote survival? Or is it something more?

Tomasello et al (2012:676) reports on the way in which even 3-year old human children are unique when compared to chimpanzees or bonobos. They are much more likely to help one another in a sophisticated manner, showing a marked difference in social behaviour.[105] Young human children also show a unique ability to show empathy towards those of other species, something exceedingly difficult to account for within a neodarwinian framework.[106] Neither kinship, reciprocal altruism, or group selection can account for the basic concept of friendship, except to consider it a purely mercenary endeavour.[107]

Lewontin pointed out already in the mid-1990s, in a nod to epigenetics, that 'internal [ie: nature] is not identical with genetic.' (Lewontin 1992:64). He uses the example of fruit flies, who have different numbers of long sensor hairs on the sides of their bodies despite having the same genes and the same environment on each side during development. But simply pointing out that types of behaviour and even thought patterns have a physiological

105 'In a direct comparison of species, Hamann, Warneken, and Tomasello (2011) found that 3-year-old children shared resources more equitably if those resources resulted from their collaborative efforts, rather than from parallel work or no work at all, whereas chimpanzees 'shared' (allowed the other to take) to the same degree (and infrequently) no matter how the spoils were produced' (Tomasello et al 2012:676).

106 A number of studies have shown that children demonstrate a moral valuing of animals. 'Children recognize that animals have their own subjective states and can have interests in interacting with the child." (Kahn 2006:462-463). 'Children develop moral relationships with (and engage in moral reasoning about) both sentient and nonsentient nature' (Kahn 2006:464).

107 Verbeek (2006:426) points out the need for evolutionary ethicists to give a better explanation of friendship. The idea that friendship is simply a 'means to an end' is sometimes called 'Veneer Theory.' One evolutionist in the 1970s, suggesting veneer theory, wrote that one could 'scratch an altruist and watch a hypocrite bleed' (de Waal 2006:10). Thomas Huxley, Sigmund Freud, and Richard Dawkins have all written that the human will to good cannot be explained by Darwinian or neodarwinian evolution, and works outside the process of natural evolution (de Waal 2006:7-10).

component is a long way from explaining why they exist, and even further from explaining how they came to be in the first place. 'The real difficulty with the process of explanation that allows direct advantage, or kin selection, or reciprocal altruism when one or the other is useful in the explanation, is that a story can be invented that will explain the natural selective advantage of any trait imaginable' (Lewontin 1992:100). Consider Bowles (2012:875) who writes that 'conflict—both violent and civil, both within and between societies—has also been a midwife for humanity's most cherished values and institutions: among them democracy, the rule of law, and a propensity to help others and to abhor injustice' (Bowles 2012:875). Such an explanation is quite at odds with Ruse's, Singer's and Dawkins' acknowledgment that Neo-Darwinism has been used to justify fascism, genocide and other 20th century atrocities (Ruse 1999:198, Singer 2005:342, Dawkins 1999:11).

3.7 Conclusion

When Darwin alighted on the idea that all of the various forms of life on earth evolved from earlier, simpler life forms, he understood the ethical implications of the concept. His immediate followers worked hard to explain human morality in light of our supposed evolutionary past. With the discovery of genetics and DNA, new efforts were made to find the 'code for the conscience' in the information encoded in our cells. Mathematical theory was even enlisted to explain how a process driven by 'the survival of the fittest' could have resulted with a dominant species driven in general to serve the least and be kind to one another. The question remains to be completely and fully answered: why do humans have a sense that there is an absolute right and wrong in the world?

Michael Ruse has suggested that a widespread belief in an objective morality is simply an illusion wrought by the evolutionary process. Even so, he suggests, it is a useful one. Humans ought not jettison moral behaviour simply because the curtain has been drawn back and we now know why it exists. But it is the very *oughtness* of the human conscience that is the thing that most needs explaining.[108] In the words of Woolcock (1999:288), 'If our tendency to egoism is so strong that evolution had to develop the quite specific mechanism of a disposition to believe in the objectivity of morals to overcome it, then, surely, will not wide public dissemination [that that objectivity is an illusion]

108 Ruse's 'emphasis on the fact that people tend to believe in the objectivity of morality has added an important element to what evolutionary ethicists need to explain, even though he thinks that such objectivity is ultimately illusory' (Woolcock 1999:291).

undermine this disposition?' (Woolcock 1999:288). Explaining the workings of the conscience, and even explaining its origin, still does not explain why humans have the sense that morality is more than a survival instinct left over from millions of years of evolutionary development.

There is no question that science has come far in elucidating the functions of the brain. Damage to that vital organ can cause paralysis of limbs, memory loss, changes in behaviour, and even changes in ethical outlook. Certain chemicals can bring happiness to those who are depressed, and induce anger in the otherwise well-adjusted. Where once we explained emotions by reference to the soul, we are now just as likely to reference them to the brain.

But understanding the brain and understanding the brain's origins are two separate matters. Just because we can explain how something works does not mean we can explain how it came to be that way. The leopard's spots may be for camouflage; but that knowledge says nothing about how the spots came to be there in the first place. We can extrapolate and make conjectures; but in science, observation is king. Many in the scientific community would ask us to believe something – neo-Darwinism – that in its fullness (primordial soup to arboreal nuts) cannot be observed or replicated. If Neo-Darwinism, why not God?

Should Christians be concerned that so much of what used to be the domain of the immaterial soul is now in the domain of the very physical brain? Some might be. But for many Christians, the Incarnation of Jesus emphasised the truth of Scripture that God always works through physical means. He appears in burning bushes; he parts seas; he changes water into wine and feeds thousands with real bread and fish. Christ himself gives Christians throughout time and space his body and blood under bread and wine (Matthew 26:26-28). God uses the physical to manifest spiritual realities. Who I am, the information encoded in my neurons, is known fully and completely to the God who will hold me safe and secure until the Last Day. On that day the physical world will be re-formed (2 Peter 3:13, Revelation 21:1-5) and I will be raised with a body that will have continuity with my old one – and my old brain – and yet be something new, eternal, and holy (1 Corinthians 15:35-55).

In this life, though, Christians are called to proclaim the Gospel of Christ. That means

speaking with those who share points of view sometimes radically opposed to our own. The next chapter will compare and contrast the traditional views of Christians on the conscience with those held by Neo-Darwinists. The intent will be to provide apologetic approaches by identifying points of convergence first, then points of divergence.

Chapter 4: Analysis of Both Views

4.1 Introduction

Christian theological tradition has long posited that almost all humans have an inborn sense that right ought to be done and wrong ought to be eschewed. From Paul's use of συνείδησις – conscience – in Romans 2:14-16, through the teachings of Thomas Aquinas, Martin Luther and John Calvin in the Middle Ages, and on to the present age, Christians have believed that God has given humans access to basic, universal moral principles. The way in which this conscience functions has been debated, as well as the degree to which it is present in specific humans, and the way in which culture can shape or deform it. But there has been general agreement, with a few modern exceptions, that a basic objective morality exists and that humans have a sense which points their thoughts and actions toward that objective truth.[109]

Charles Darwin and those who followed the tenets of his principles of evolution understood the implications of his theory for the concept of a universal, objective morality. The modern synthesis of Darwin's evolutionary ideas remain a cornerstone of modern biology. Many, especially in recent decades, have therefore been asking after the future of ethics in a world where humans are simply an evolved version of a lesser species, a species selected by nature for its ability not to be moral but to survive and reproduce.[110] Unlike Christian theology which has searched after the why of morality, Neo-Darwinism has sought to chiefly understand the how. In doing so evolutionary thought has raised considerable doubt on the objectivity of human ethics and morality.[111]

Previous chapters have laid out the significant historical viewpoints on conscience from a

109 See Chapter 2 for evidence of this belief. Christians in the last century, however, have questioned the human ability to access these objective ethics in any meaningful way, as will be seen below. It does not seem to be a coincidence that this shift in theological thinking has coincided with the rise of the modern evolutionary synthesis to scientific prominence.

110 'Over the past forty years an extensive literature has developed on the origins of morality and of our moral intuitions, much of it informed by a considerable body of empirical research' (de Lazari-Radek 2012:13).

111 This has raised concerns, since for many the idea of an objective moral truth remains a common sense notion. Richards writes that 'many people who are by now resigned to the idea of our biological relationship with apes and fruit flies, and even yeast, are nevertheless alarmed by the way Darwinism seems increasingly to be getting ideas above its station, and encroaching on territory that at first looked as though it could be kept sacrosanct' (2000:1). Tauber likewise writes that 'the ethical implications of [Darwinism's] influence are profound, and perhaps no better articulated than in discussions concerning the extent to which human nature is biologically determined' (1999:479).

Christian theological perspective, and according to the modern evolutionary synthesis built around Darwin's ideas. Some have offered critiques, however, of each position. Modern theologians, especially within the protestant tradition, have argued that theologies of natural law and conscience need to be rethought.[112] New advances in science, notably in quantum mechanics and neurology, have raised questions about whether strict materialism as espoused by many Neo-darwinists is sufficient to explain the function of the human mind.[113] There are points of convergence between Christian thought and materialist evolutionists to be considered, as well as points of divergence to be noted. The following sections will examine all of these in turn.

4.2. The Conscience and Christian Theology

Christian theology from the time of the Apostles through to the time of the Reformation did not disagree significantly with the idea, present in Greek and Roman tradition, that all humans have access to an objective moral law.[114] Humans are able to judge right from wrong, even if they do not always choose to do the right. At the heart of this thinking is the belief that the God whose self-revelation is found in Christ Jesus is the origin of this law. For some, natural law and conscience includes some knowledge of God, while for others it has only to do with earthly life in society. Some believed that the moral nature of humanity is tied to reason and consciousness, while for others it is more instinctual or emotional.[115] Each of these views will be considered briefly before turning to direct critiques of the Christian theological perspective on conscience.

4.2.1. The Christian Case for Conscience

The extent to which human conscience points towards a transcendent reality in some direct way has been debated throughout Christian history.[116] Tertullian, as one example,

112 Consider Barth and Thielicke (Bockle 1966:67), who critique the value of any natural law theology, and more contemporary theologians such as Grobien (2011) and Charles (2011b) who within Lutheranism and Calvinism, respectively, are recovering a place for natural law.

113 These concerns have been raised by physicists Penrose (1994) and Stapp (2006), and philosophers of science Davies (1992) and Meyer (1999), whose work will be considered later in this chapter.

114 "We also have the capacity to choose between good and evil, that is, to obey or disobey the law of God written on our hearts to which our conscience bears witness. This view of natural law was the common conviction of philosophers and theologians for some twenty-five hundred years, from Plato and Aristotle to Aquinas and Bonaventure, as well as from Luther and Calvin to Kant and Hegel' (Braaten 2011:5).

115 '[Natural law in the Middle Ages] was associated with that which was common to humanity and animals but also included in some cases the laws of the nations, the divine law in the prophets, and Mosaic law, a human tendency to do good and avoid evil, and the concept of natural justice' (Deane-Drummond 2007:987).

116 The apostle Paul's own writings on this point are ambiguous, which is possibly the root of the theological disagreement. Paul, writing of those who 'suppress the truth about God,' believes that God's ' invisible

fell on the side of those who believed the human conscience points even if imperfectly towards divinity.[117] Aquinas, likewise, saw natural law acting in human beings this way.[118] The conscience opens up the human mind to something beyond the material, and is not simply a device pointing humans in the direction of what ought to be done.

Others saw the conscience as a gift from God given to all people after the Fall to restrain the evil desires that arise as a result of sin. William of Ockham, writing around the same time as Thomas Aquinas, disagreed that humans had a natural inclination or ability to deal with metaphysical categories.[119] This line of thinking would be taken up by Martin Luther, who held human nature to be of little value in reflecting on divine realities.[120]

Some Christian thinkers emphasized the role of reason in conscientious behaviour. Aquinas was certainly one of these, although he did not deny the role of the instinctual either. Grobien (2011:24) writes that, for Aquinas, 'all those things to which man has a natural inclination, are naturally apprehended by reason as being good, and consequently as objects of pursuit. What we are inclined towards by nature, whether a basic bodily need, the desire of the senses, or the fulfillment of the intellect, are natural goods.' Many scholastics believed that human morality consists in our ability to understand ethics on a conscious level (Grobien 2011:25).

Others, such as Luther, saw instinctual inclination as predominating in conscientious behaviour, not intellectual reasoning. In the words of Pearson (2011:63), 'Luther creates a new account of natural law morality: instinctive, not rational; provisional, not ontologically secured; pragmatic, not divinely commanded; chastened by sin, not robust with natural

---

attributes, namely, his eternal power and divine nature, have been clearly perceived, ever since the creation of the world, in the things that have been made' (Romans 1:18, 20 ESV). Because of this all people are able to know God, yet not 'honor him as God or give thanks to him, but [become] futile in their thinking' (Romans 1:21 ESV). Is this a present reality, or a description of the Fall or some other past event? Is Paul saying that natural law gives all some knowledge of God, or that it would if only people were without sin?

117 'The greater part, therefore, of the human race, although they knew not even the name of Moses, much less his writings, yet knew the God of Moses...Reflect, then, whether they knew Him, of whom they testify that He can do all things. To none of the writings of Moses do they owe this. The soul was before prophecy. From the beginning the knowledge of God is the dowry of the soul, one and the same amongst the Egyptians, and the Syrians, and the tribes of Pontus. For their souls call the God of the Jews their God' (Tertullian 2001, 1:10).

118 Aquinas believed, for example, that there existed certain *de fide* truths about God known to all people (McInerny 1987:21).

119 Ockham introduced the *via moderna*, or nominalism, as a different approach to natural knowledge understood theologically. He believed that reason, apart from revelation, could not know God (Grobien 2011:29).

120 Luther is emphatic that we 'cannot by our own reason or strength believe in Jesus Christ' (1991:17). This is not just a past condition but a present reality, even for Christians.

human possibilities.' Conscience is a 'capacity for judgment...a context for reflection' (Grobien 2011:37). Calvin, likewise, sees conscience as 'an immediate awareness of divine judgment for wrongdoing that compels people to acknowledge their guilt' (Grabill 2006:93).

There is a belief that conscience can be trained, and that it is more powerful in some than in others. Luther reflects on the latter when he writes that 'if natural law and reason would stick in all heads, men's head are equal, then fools, children and women could rule as well and leads wars as David, Augustus, Hannibal' (Ziegler 2011:70). Aquinas likewise believed that 'good action is the result of good character...and character is formed by repeated acts of a given kind until our hearts are inclined to good action' (McInerny 1987:33).

There is certainly no discussion in the first millennia and a half of Christian theology of how exactly conscience, either its reasonable or its instinctual components, operates, at least not in any way that would satisfy a modern scientist. But there is a basic sense that morality has a divine origin that gives it a transcendent character; that all humans have knowledge of it and can be inclined to it or away from it; that it involves both reason and instinct, although there is disagreement about the proportion of each.

4.2.2. The Case Against Theologies of Conscience

Many have bemoaned what they see as an increase in immoral and amoral behaviour in the United States.[121] In other words, without God to endorse or back an objective morality then such an objective morality is not possible. But the Neo-darwinian conception of humanity indicates that human morality has a 'this-worldly' origin, and has arisen through purely mechanistic and naturalistic means.[122] Is it in fact the case that the loss of a Christian (or other metaphysical) backing of morality necessarily results in the loss of any objective ethic?

Richards argues that, from a philosophical perspective, this is not necessarily the case. One must first ask an ancient question raised by Plato, which is whether God wills certain

121 Consider military chaplains such as Rupe (2011:48) 'Can [Americans] be taught that truth is not self-defined but is a product of the conscience that our Lord gives to each of us?' or Eberle (2007:482) who articulates 'a theistic rationale in support of discriminating obedience [of military orders], but I do not articulate a secular rationale for discriminating obedience. That is because I am not sure that there is a comparably powerful secular rationale for that claim.' (Eberle 2007:482).

122 'If matter vanished, minds and ideas would vanish too. The materialist Darwinian view is that life emerged from matter, and consciousness from life, by entirely Darwinian means' (Richards 2000:55).

moral behaviour and therefore that behaviour is good, or whether God wills certain behaviours because they are intrinsically good in themselves. The first is known as 'Divine Command Theory' and the second sees good as a Platonic ideal (Richards 2000:189). If the first is the case, the existence of an intrinsic moral good is not contingent on the existence of God. Therefore an objective morality is not strictly tied to God's existence. In the second case, Richards argues (2000:189), 'you can no longer meaningfully claim that God is good.' The claim is simply that humans are 'hardwired' to make certain judgements about what God wants and doesn't want, not about what is intrinsically right or wrong.

In either case, however, there is a metaphysical explanation for the judgements humans are inclined to make about certain states of affairs or behaviours. Whether the good humans are inclined to do is a good that stands alongside God, or whether it is simply the will of such a God, the intent is outside of the purely material order. Richards argument that Aquinas, in identifying the Platonic good as identical with God, is in fact saying nothing about either also seems hollow.

Christian theology has also argued that conscience is a gift given in order to restrain evil and promote good within society. There is therefore a baseline of moral behaviour across all cultures and peoples, and even into the animal realm.[123] Maas (2011:221) points out that 'The universal prohibition of homicide in positive law, whether oral or written, of the world's societies is one of the most immediately obvious indications that such a proscription might in fact transcend [culture].' Yet others have argued that, far from moral judgements being consistent across cultural boundaries, they are in fact quite diverse. So de Lazari-Radek and Singer (2012:9) write 'If...our moral judgments result from our upbringing in a particular culture and others brought up in different cultures have contrary moral judgments, this may be seen as discrediting all such judgments.'

Certainly examples can be found of behaviours the morality of which even Christians disagree.[124] But this seems to be a question of differing on details rather than on

123 Aquinas, for example, saw points of continuity between human and animal behaviour such as a desire to reproduce and raise young (McInerny 1987:33).

124 'The decrees of the natural law are “promulgations of laws to the rational creature by the Creator,” yet such are discovered through reason, not through revelation' (Elizabeth Anscomb quoted in Dubois 2008:206). Natural law for Anscomb is 'not a specific methodology for discovering ethical truths...it is rather the body of ethical truths' (Dubois 2008:207). For John Finnis, natural law is not arrived at intuitively, but rather through a reasoned application of principles such as remaining open to 'integral human fulfillment' (Finnis quoted in Dubois 2008:209). Using a comparison of contraception and anaesthesia, Dubois denies the view 'propounded by many Catholic thinkers, that natural reason can know – either through intuition or an analysis of basic good – that contraception, for example, is always and everywhere wrong' (Dubois 2008:214).

fundamentals. Despite many attempts to do so, no culture on earth has been found that does not have proscriptions surrounding physical harm to a neighbour, property rights, or sexual behaviour.[125] Any claim that, since morality can be shaped by environment, it can therefore not be intrinsic to human nature, also works against some neodarwinistic explanations of human morality as well. In any case, Christian theologians have long recognized that, like any talent or ability, a lack of use will lead to a loss of function.

This leaves the question of whether instinct or reason predominates in human moral behaviour. Theologians have found themselves on all sides of this argument, as have materialists. It would seem that theology has, at least here, anticipated scientific advances. Materialists scientists argue that there is a component to moral decision making that involves higher order brain processes – reason – and also a component that involves more base processes such as instincts and emotions. It is, however, in arguing for the source of those processes that Christian theologians and strict materialists differ.

4.3 Conscience and the Neo-Darwinian Synthesis

Most of those who accept the modern synthesis of Darwinism as an adequate explanation for life's origin view the brain as a complex, organic, computer.[126] The three questions that need to be posed back to those who hold this view are these. First, is the brain in fact an organic computer analogous to those which humanity itself has learned to construct? Second, is the modern evolutionary synthesis a complete explanation for the origin of the human brain? Third, even if both of these prove true, do they adequately account for the human sense that morality is bigger than the human race, and more than simply a program of survival evolved over millions of years?

From Plato through Descartes, most thinkers have held to an understanding of mental processes known as dualism.[127] This view holds that the physical body is in some way

125 The one description of a culture with no sexual proscriptions whatsoever, given by Margaret Mead, was later discredited (Wright 1998:164).

126 Nagel (2012) is only one of many who has stated what seems obvious, that 'among the scientists and philosophers who do express views about the natural order as a whole, reductive materialism is widely assumed to be the only serious possibility' (3). Monin (1992) describes the conscience as an 'algorithm of good and evil pattern recognition in the actions performed by the system or analyzed as possible' (5777).

127 Some form of dualism continues in the idea that information has an existence distinct from both matter and energy. Descartes argues that since 'we can clearly conceive of the mind existing without the physical body, and vice versa, they can't be one thing' (Nagel 2012:40). Strict materialism holds to the idea that information has an existence contingent on matter and energy. 'If matter vanished, minds and ideas would vanish too' (Richards 2000:55).

distinct from the mind, or soul, which animates it. The more prevalent view today is a radical materialist monism, which collapses the brain and mind together, finding the latter to be a simple manifestation of the former. Craddock (2013) points out that 'for centuries, we have known that susceptibility to psychiatric illness can be inherited. In the past five years, studies of tens of thousands of people are beginning to pin down some of the genes and biochemical pathways involved' (2).[128] If mental illness is nothing but a malfunctioning of the brain, a right functioning conscience must be nothing but the brain functioning correctly. Once science is able to correctly model the brain's function, the reason why people view certain actions as right and others as wrong will be uncovered once and for all.

There are some philosophers and scientists who remain sceptical of simplistic portrayals of the brain as a mere 'organic computer.' A small group of physicists insist that quantum effects need to be considered in the brain's function and may be responsible for the human sense of 'free will' when making decisions. Roger Penrose, for example, argues that consciousness is an emergent property of the brain only once quantum effects are considered.[129] He bases his argument on the human brain's capacity to formulate certain mathematical concepts such as Kurt Godel's famous Incompleteness Theorem in mathematical set theory. Human consciousness is, Penrose argues, non-computational. 'It is this potential for the awareness of mathematical concepts... that gives the mind a power beyond what can ever be achieved by a device dependent solely upon computations for its action' (Penrose 1994:52ff).

Others across fields as diverse as psychology, neurology and quantum physics continue to pursue the possibility that quantum effects make the brain's function more complex than some might think. Schwartz et. al. (2005), for example, state that in order to understand

128 'Powerful advances are also being made in using computer networks to model neuron biology and to build complex neuronal networks, which should produce interesting emergent properties. The European Union's €1.1 billion Human Brain Project, for example, aims to understand the brain as a single system, integrating multiple levels of organisation – surely a key step towards preventing or curing psychiatric diseases' (Craddock 2013:3).

129 Quantum mechanics is the system of theories that describe the nature of matter and energy at the subatomic level. It is beyond the scope of this paper to give a full description of the theories involved. But at the subatomic level things differ significantly from the behaviour of objects at the macro level. Subatomic particles can 'remember' properties of twin particles and react across distances longer than the speed of light, their speeds and positions become entangled so that one cannot be fully known if the other is fully known, and their behaviour is affected by human observation. The 'profound difference between contemporary physical theory and the classical physical theories of the eighteenth and nineteenth centuries would appear, *prima facie*, to be relevant to issues pertaining to the relationship between mind and matter' (Stapp 2006:121).

'the physics of the interface between mind/consciousness and the physical brain' it is 'necessary in principle to advance to the quantum level to achieve an adequate theory of the neurophysiology of volitionally directed activity' (1310). Stapp (2006) likewise believes that 'the behavior of a living brain must in principle be treated as a quantum mechanical system, with classical concepts applied only when justified by special circumstances' (12).

Even if one does not accept the quantum argument or the arguments of neurologists, computer scientists recognize a fundamental difference between human constructed computational devices and the brain.[130] One of the main differences is in the brain's ability to reprogram itself, for good or for ill. Schwartz et. al. (2005) reports on those suffering from obsessive-compulsive disorder (OCD) and their ability to retrain their minds as evidenced in neurological scans before and after talk therapy.[131]

The second question is whether such a complex organ as the brain could have been produced by strict neodarwinian means. Certainly psychologists who subscribe to the neodarwinian view believe that the modern synthesis adequately explains human behaviour.[132] But others believe that the very existence of something as complex as the brain, and the way in which human consciousness and conscience manifest themselves, cry out for a better explanation than random genetic mutations being acted on by natural selection.

Meyer (1999) points out that gradualist explanations for the most complex systems in living organisms are still lacking.[133] It is precisely this point that makes the neodarwinist modern synthesis a proposed model without the robustness of other well-tested scientific theories. Most scientific theories, such as the theory of gravity[134], explain observed phenomenon in

130 'The fortuity of formation of neurons and synapses in the ontogenesis of an individual human brain determines the inimitably of its cellular structure and therefore the observed scatter of parameters and abilities of individuals. That is why human individuals are inimitable and every person is priceless. Just this is the principal difference between human beings and modern computers, the structure of which, down to its smallest elements and connections between them, is rigidly preprogrammed, so that all computers of the same series have an identical structure' (Morin 1992:5775).

131 'An accelerating number of studies in the neuroimaging literature significantly support the thesis that, again, with appropriate training and effort, people can systematically alter neural circuitry associated with a variety of mental and physical states that are frankly pathological' (Schwartz 2005:1310).

132 'Evolutionary psychologists believe that an understanding of the evolutionary process that made us what we are is essential for understanding the nature of our deepest emotions and abilities, and why different environments have the effects they do' (Richards 2000:56).

133 'We know of only one cause sufficient to produce functionally integrated, irreducibly complex systems, namely, intelligent design. Whenever we encounter irreducibly complex systems and we know how they arose, invariably a designer played a causal role' (Meyer 1999:15).

134 The formula for the relationship of gravity to two masses is quite simple: Fg = G * (M1 * M2) / r2, where the force of gravity is equal to the product of the two masses divided by the square of their distance multiplied by G, the universal gravitational constant.

such a way that similar phenomenon can be predicted and explained in the future. Take the example of an apple falling from a tree. An observer sees the apple in the tree, then dislodged, then in a state of movement to the ground, then in a state of relative rest on the ground. Gravitational theory (along with simple statics and aerodynamics) describes how the apple will come to be dislodged, the speed at which it will fall, and why it will come to rest.

The models that make up what is known as Neo-Darwinism do not truly attempt to describe an observed phenomenon but only its end-point. The evolutionist sees an apple on the ground and attempts to explain why it should be there. Neo-Darwinism proposes, with absolutist certainty, that the apple fell from the tree, and describes exactly how this came to pass. But suppose someone placed the apple on the ground, having purchased it in a store? Without direct observation of the intervening process – apple in tree, falling, in state of rest, or amoeba becoming mammal becoming human – Neo-Darwinism is at best only one possible explanation for an observed end-point. It is an explanation evoked for a process that has not been fully observed or understood as of yet. It is not good invoking observed adaptation of existing forms of life. The apple may roll away from the tree: but this still does not provide a sufficient explanation for how it got there in the first place.

Last, there is the question of whether the modern evolutionary synthesis explains one of the most profound mysteries of the conscience, the sense that right and wrong really exist and that good and evil are not subjective but in some way objective. Street (2006) argues that there is no plausible way for strict materialist evolutionists to defend an objective morality. If evolution is independent of an objective moral law, then it is impossible to know which ethical perceptions are true and which have been distorted by evolution. The alternative is the view that evolution has led humans, at least, to be able to accurately access a fundamental objective moral reality. But this Street argues, 'is unacceptable on scientific grounds' (2006:109). This would imply a teleology to evolution that strict materialists have rejected. Street also points out the possibility that human altruism is an accident of evolution, and not a psychological feature directly selected for its survival value at all.[135]

135 'According to [evolutionary psychology] human cognitive traits are (in some cases) just as susceptible to Darwinian explanation as human physical traits are (in some cases)... There are many pitfalls that such evolutionary theorizing must avoid, the most important of which is the mistake of assuming that every observable trait (whether cognitive or physical) is an adaptation resulting from natural selection, as opposed to the result of any number of other complex (non- selective or only partially selective) processes that could have produced it' (Street 2006:113).

Critics have attempted to address the points she raises. The main point, of course, is that 'if our moral beliefs are evolutionarily advantageous, then the advantages they confer on us in surviving and reproducing have nothing to do with their truth' (de Lazari-Radek and Singer 2012:13). One possibility is that an ability to reason confers a survival advantage, and that reason is able to correctly adduce objective moral truth.[136] But this still leaves unanswered the larger question of why our reason itself should be trusted as being reasonable, something which will be touched on later in this chapter.

Some who hold to the modern evolutionary synthesis have proposed that the human sense of conscience has arisen over millennia as a survival mechanism. Kinship theories and notions of reciprocal altruism, the survival value of empathy for groups, and game-theory attempts to show that cooperating animals out-reproduce non-social animals; all have been proposed as Neo-Darwinian explanations for conscience. But is the brain merely a more complex, organic form of the same computational devices created by humans, or something more and unexpected? Can evolution give a satisfactory explanation of the brain's existence, or is such an explanation still forthcoming? Can evolution give an explanation of the sense that morality is not a mere survival instinct but something more, something that can be of the realm of reason even while also being instinctual? These remain three important critiques of the Neo-Darwinian approach to explaining conscience.

4.4 Points of Convergence

There are significant points of convergence between traditional Christian understandings of conscience and the modern synthesis. First, this includes a belief that the universe, including human nature, is open to scientific investigation. The world is ordered in such a way that its function is reasonable. Second, there is the acknowledgement that there is both a rational and an instinctual component to the moral behaviour of humans. Humans have, in general, a gut reaction to certain behaviour which they can also evaluate, and defend or excuse, rationally. Last, there is a belief that both nature and nurture play a role in shaping the human conscience. Humans are born with it, but it can be strengthened

136 'It may be that having a capacity to reason involves more than an ability to make valid inferences from premises to conclusions. It may include the ability to recognize and reject capricious or arbitrary grounds for drawing distinctions and to understand self-evident moral truths...We might have become reasoning beings because that enabled us to solve a variety of problems that would otherwise have hampered our survival, but once we are capable of reasoning, we may be unable to avoid recognizing and discovering some truths that do not aid our survival' (de Lazari-Radek and Singer 2012:16).

and weakened by the environment.

In any attempt to provide an apology for one's point of view, it is important to identify points of convergence from which one can start a conversation. A good example of this is Paul approach to the people of Athens as recorded in Acts 17:16-34. On seeing the idolatry of the Athenians, Paul's 'spirit was provoked within him as he saw that the city was full of idols' (Acts 17:16, ESV). Nonetheless, he began his sermon not with his anger at the Athenians' false worship but rather at what he and they had in common; namely, their desire to reach out to the divine. In the section following this one significant points of conflict between the traditional Christian view of conscience and the one promoted by Neo-Darwinism will be presented. But first, the points of similarity that can serve as a beginning for conversation will be evaluated.

4.4.1. The Universe can be Understood

Both Christian theology and modern materialists, the former explicitly and the latter implicitly, acknowledge that the universe is amenable to scientific investigation. Sometimes non-Christians themselves remind materialists that this is in itself a minor miracle.[137] Why, after all, should the universe be open to rational investigation? It could just as well be that effects which seem to hold at the quantum level might hold all the way to the macroscopic, making a discovery of 'laws of nature' next to impossible.[138] Christianity laid the foundations for the scientific method on which materialism has come to depend.

Certainly many scientists feel that Christianity, far from being an ally of science, is in fact its enemy.[139] The caricature is that Christianity (and indeed most world religions) were

137 'The success of the scientific method at unlocking the secrets of nature is so dazzling it can blind us to the greatest scientific miracle of all: *science works*. Scientists themselves normally take it for granted that we live in a rational, ordered cosmos...Yet why it should be so remains a tantalizing mystery' (Davies 1992:20).

138 The term 'laws of nature' is used in this work because this is how scientists who hold to positivism and naturalism refer to God's regular and providential ordering of the world. 'For example, Newton's law of gravitation is a human approximate formulation of the universal pattern that God has specified for falling objects and gravitating objects' (Poythress 2014:103). Christians should not forget, however, that what many call a 'law of nature' is simply an observation of the regularities of God's ordered and purposeful providential care (see Romans 1:20).

139 Davies points out that an 'existentialist ethos – that there is no significance in human life beyond what humans themselves invest in it – has become a leitmotif of science' (1992:21). Richards points out that one of the successes of Darwinism is its 'thoroughgoing materialism [which offers] a complete, skyhookless account of our origins and nature' (Richards 2000:82), so that 'it now seems that ideas of gods and souls were early explanatory hypotheses that were quite reasonable in their time – as astrology was in its time – but are now unnecessary' (Richards 2000:61).

precursors to science, which now provides truer explanations of how the world functions. But others, both Christian and non-Christian, have pointed out that Christianity provided the underlying belief that allowed science to advance: the understanding that the universe was created by an ordered intelligence which itself stands outside and beside the universe.[140] Pantheism and, in some cases, panentheism makes the study of the universe identical with theology and philosophy. For atheism a rational universe must be an *a priori* belief accepted in order to make any scientific progress. Christianity presupposes a rational world open to investigation.

Materialists who hold to the Neo-Darwinian evolutionary explanation of life's progress tacitly accept the Christian view of an orderly universe. They must in order to make progress.[141] But the very idea that underwrites the scientific method also challenges some aspects of the Neo-Darwinian models. Some have challenged whether materialist ideas of the origin of conscience and, indeed, consciousness itself might themselves reveal the inadequacy of materialism and Neo-Darwinism. In the view of Nagel, 'conscious subjects and their mental lives are inescapable components of reality not describable by the physical sciences' (2012:41). If this is the case, then to retain materialism one must hold to 'eliminative materialism' – the view that mental events are illusions – or accept that pure materialism is an inadequate view of reality.

4.4.2 Conscience is Both Rational and Instinctual

Another point of convergence between orthodox Christian theological views of conscience and those of materialist neodarwinists is that human conscience has both an instinctual and a rational component. Both use different terminology, and both see a different origin for these two aspects of conscience. But this is a significant point of convergence.

140 Lisle (2009) presents and defends the view that orthodox Christianity alone provides a solid foundation from which to do science. It presents a view that the world is intelligible because it was created by a non-arbitrary, rational entity. Non-Christians have also noted that science flourished in Christian Europe while it floundered elsewhere, for example in China. 'In the absence of the concept of a divine being who acted to legislate what went on in the natural world, whose decrees formed inviolate 'laws' of Nature, and who underwrote the scientific enterprise, Chinese science was condemned to a curious stillbirth' (quoting John Barrow in Davies 1992:77).

141 'The challenge to claims of scientific certainty that we are now considering is not that there is too little evidence, or that new evidence may appear unexpectedly, but that all evidence will be useless if the world underlying our experience is in some way illusory. So that question here is not about whether we ought to believe in the claims of Darwinism in particular, but about whether there is any point in undertaking scientific enquiry at all' (Richards 2000:35). In other words, science accepts the view that Descartes espoused, that our senses reliably report on the true features of a rational universe. However Descartes could hold to that belief because of his belief that 'God was the fountainhead and guarantor of the total rationality that pervades the cosmos. It is this rationality that opens the door to the understanding of nature by the application of human reason, itself a gift from God' (Davies 1992:77).

As presented earlier in this work, Paul speaks of 'the law written on the heart' (Romans 2:15, ESV) as a way in which God has imprinted in humans a sense of right and wrong. This sense can be thought about and built on, but it has an existence prior to rational reflection. The theologians of the early church tend to speak of the law in a similar way. Justin Martyr, as one example, speaks of the law as known by all people (something innate or instinctual), but which can be lost through 'education, by wicked customs, and by sinful institutions' (Martyr 2001, ch.93). Augustine flips the roles of instinct and reason. Humans can reflect on several courses of actions, but instinct helps point us in the direction of the correct choice (Augustine 2001a, 1:18).

Aquinas saw reason as a tool given to humans to guide them towards natural, rather than unnatural, ends. That which is natural (i.e.: instinctual) is good (Grobien 2011:24). He therefore emphasized the role of reason in human moral behaviour, while not denying the place of natural 'instinct.' Luther, in contrast, emphasized the role of instinct. But neither did he deny reason, pointing out that careful study of God's Word (a rational activity, in the end) can train our in-born sense of right and wrong (Grobien 2011:37). Calvin emphasized both as well. He believed that 'the testimony of natural law, and of that conscience which God has engraven on the minds of men...ought to be the aim, the rule and the end of all laws' (Calvin 1989, 4:20). Humans can think about their sense of justice, and establish governmental laws accordingly.

Neo-Darwinists, from those who lean toward a strong view of genetic determinism (Dawkins, Dennett) to those willing to consider a fairly large role for environment (Lewontin, Rutter) all recognize that humans have both an inborn sense of morality and are able to reflect critically on moral decisions. Both working together constitute the human conscience. Few deny the assertion quoted earlier of Edsten and Richerson (2007:82), that genes, culture and training all influence and shape the conscience. Any attempt to isolate the conscience in genetics, or in reason influenced by environment, will be lacking. Like orthodox Christian theologians, those who hold to the modern evolutionary synthesis assert that humans are both born with an instinctual sense of justice, which can also be influenced by the environment.

4.4.3 Nature and Nurture: Both / And, not Either / Or

The implication that conscience has both an instinctual component and a rational component is that it can be shaped by the environment. The current answer to the nature /nurture debate, as given both by orthodox Christian theologians and Neo-Darwinists, is that both play a role. Humans are born with some innate sense of morality, but that sense can be strengthened or weakened by environment (passively) and training (actively).

Environment and training were seen as the primary culprit for immoral behaviour by many Christian teachers. Clement of Alexandria writes that humans act immorally due to errors of reason (Clement 2001, 1:13). Aquinas emphasized the need for humans to train their reason to think righteously (Aquinas 1947.1-11:91). Luther points out that some people can apply their reason to natural instinct admirably, while for others it seems to quite difficult (WA 51:212, quoted in Ziegler 2011:70). While almost all humans come into the world with a natural basis for conscience, environment plays a role in shaping every person's moral reasoning.

For Neo-Darwinists, genes play a central role in someone's moral outlook. But that it is not to say that there is a 'gene for morality.'[142] It is more correct to say that nature provides a basic template for right and wrong. A common environment can then shape that template so that those who share that environment tend to share a common moral outlook. Reason can then further shape that template, so that a person can actively channel their instincts in a certain direction, for either good or ill. Newer research is showing that nurture can have a significant impact on behaviour, and especially on Neo-Darwinism's chief explanation for conscience: an evolved sense of empathy towards others. [143]

142 Even traits present in someone's genes do not condemn a person to a certain form of behaviour. 'There is no reason to think that the changing of a genetically induced trait is intrinsically impossible, even though it is likely to be resistant to change under familiar circumstances' (Richards 2000:117). Behaviour to which someone is predisposed can be modified.

143 'Nature dictates the principles, whereas nurture controls the parameters' (Edsten and Richerson 2007:82). Zak (2011) reports on new research showing that levels of empathy can change more rapidly than can be accounted for by genetic or epigenetic changes alone. The research, led by Sara H. Konrath of the University of Michigan at Ann Arbor and published online in August in *Personality and Social Psychology Review*, found that college students' self-reported empathy has declined since 1980, with an especially steep drop in the past 10 years. To make matters worse, during this same period students' self-reported narcissism has reached new heights, according to research by Jean M. Twenge, a psychologist at San Diego State University' (Zak 2011). Reasons cited include young Americans being 'more likely to live alone and less likely to join groups,' a change in 'the types of information we consume,' and a drop in 'the number of adults who read literature for pleasure' (Zak 2011). No genetic basis was suggested as a possible reason for this evolution away from sociality and towards individualism. None could, because thirty years is simply too short a time frame to allow for a neodarwinian explanation.

Science is therefore suggesting that nature can shape the baseline of both human instincts and reason, but environment can continue to mould instinct while education can continue to influence reason.

4.5 Points of Divergence

Those are some of the points of agreement between orthodox theological views of conscience and those holding to a Neo-Darwinistic explanation for morality. There are, however, significant points of divergence. One of the main points of disagreement is the origin of life itself, and how both conscience and consciousness could have arisen without any driving teleological force or intelligent involvement from outside.[144] The second is a question of explanatory scope. Christian theology grounds conscience in a morality outside of nature, namely within the Godhead. The objective nature of good and evil is thus safeguarded, and appeals to justice can be more than simply opinion. Neo-Darwinism, as seen earlier, struggles with the question of whether morality is, in fact, objective in any true sense or simply an illusion instilled in humans as an aid to the species' survival.

4.5.1. The Origin of Life

There are certainly Christians who deny that Neo-Darwinism makes any claim for or against the existence of a deity.[145] Others see the modern synthesis as the main alternative to belief in the existence of a 'Creator.'[146] They see Neo-Darwinism as providing a 'skyhook-less' explanation for life, one that does not require a literal deus ex machina. Still other non-theists question whether Neo-Darwinism needs to be reconsidered as the main model for the forms of life found on earth.[147] By and large,

144 The Scriptural description of creation and the origin of life in Genesis 1-3 stands in stark contrast to the Neo-Darwinian explanation for the origin of life, and the general evolutionary time scale for the origin of the universe and our solar system. Some Christians have attempted to hold to an evolutionary view of life's origin while retaining belief in God, a view known as theistic evolution. 'Theistic evolution is the dominant position of serious biologists who are also serious believers' (Collins 2006:199). That view, however, comes at the cost of rejecting the historical value of the Book of Genesis. This author accepts the historic view of the Church regarding creation and the origin of life, namely the view presented in Genesis. But arguing for that position and against Neo-Darwinism requires one to understand both positions in their fullness, and not simply caricatures of those positions.

145 'Evolution itself is non-theistic, and makes no comments about God or God's relationship to creation' (Woloshak 2011:220).

146 'God and natural selection are, after all, the only two workable theories we have of why we exist' (Dawkins 1999:181).

147 Examples mentioned previously include Davies (1992) and Nagel (2012) who question whether the model is truly able to explain the emergence of complex forms of life and, notably, the existence of consciousness and conscience.

however, those who contend for a purely objective form of morality tend to point towards an ultimate good or a God as the grounding for that objective reality. Those who espouse Neo-Darwinism as a 'Creator-free' explanation for life's diverse forms and even for its beginnings have a more difficult time not allowing morality to become a subjective enterprise.[148]

Scientists who accept the modern evolutionary synthesis for life's development on earth believe the model to be proven beyond most doubts.[149] Others, however, believe that scientists have been blinded to the model's problems because there is no credible alternative.[150] The difficulty with mounting a challenge to Neo-Darwinism is that it needs an equally robust scientific model with which it can be replaced. Such a model must, in the view of non-theists, provide a naturalistic materialist explanation for life. But even if it could be demonstrated that the 'laws of nature' themselves will naturally give rise to such forms of life as have consciousness and even consciences, that still leaves the ultimate origin question unanswered.[151] It also raises the most tantalizing one of all. If laws exist in the universe powerful enough to permit the emergence of consciousness, might laws also exist in some form which require the existence of conscience? Christian theologians say 'of course,' while neodarwinists continue to debate this question.[152]

148 Street (2006) has provided an eloquent explanation of the evolutionist dilemma. Richards (2000) and de Lazari-Radek and Singer (2012) have attempted to provide a counterpoint to Street's thesis. Richards (2000) has argued that evolution need not rule out the existence of an ultimate good or God one way or another, and thus objective morality is preserved. De Lazari-Radek and Singer (2012) take the point of view that even an evolved conscience can access an objective reality. But both arguments depend on 'what-if' scenarios, and leave humans needing to act (without proof) that an ultimate good does, indeed, exist and can be accessed in some reliable way.

149 'Despite recent challenges, there is an overwhelming body of support for biological evolution in the scientific literature that comes from protein and DNA data, from the fossil and geological records, physiologic and functional studies, and much more (see for example, any textbook of biology currently used in universities)' (Woloshak 2011:212).

150 Tauber, for example, sees many scientists as overly influenced by the naturalistic materialism that pervades the culture in which they live. He sees 'science as fully contextualized, to the point that it is fighting to regain its sense of self' (Tauber 1999:479) . In other words, science serves the culture rather than remaining an objective observer of data. Tauber also documents the rise of a constructivist view of science. This view sees science as a culturally and societally normed activity, in which rhetorical 'persuasion is used to overwhelm the opposition' (Tauber 1999:481).

151 Theologians are often accused of ending all questions with 'God,' leading to the bitter retort 'and who made him?' Yet atheist scientists often do something similar, replacing 'God' with 'the universe.' So, for example, Alan Guth once offered 'the modest proposal that our Universe is simply one of those things which happen from time to time' (2002). Nonetheless, Davies comments, 'As long as the laws of nature were rooted in God, their existence was no more remarkable than that of matter, which God also created. But if the divine underpinning is removed, their existence becomes a profound mystery. Where do they come from?...Who devised the code?' (Davies 1992:81).

152 'Theology's rootedness in history is one of its most important distinguishing marks compared with experimental science. While theology self- consciously looks back to the earliest origins of scripture and tradition, experimental science is less concerned with historical events and more concerned with the attempt to make new discoveries according to new paradigms or models' (Deane-Drummond 2007:983).

4.5.2 Explanatory Scope

There is also a divergence between the two models' explanations of conscience when it comes to explanatory scope. Can Neo-Darwinism, currently, truly explain the sense within almost all humans that there is a universal right and wrong? When placed alongside the orthodox Christian theological tradition, which model seems to fit the data more accurately?

Consider this recent report in a *China Daily* article, referencing the seeming rise of violent behaviour across the People's Republic: 'The occurrence of endless yinao [seemingly irrational] events is only a result of the 'irrational behavior' that has been on the rise and spreading throughout the country. Dominated by a lack of reason, it is not rare for us to see the escalation of minor disputes into big ones, such as a fierce quarrel between two commuters arising from their scramble for a seat, a row and even a fight between two drivers after a minor traffic accident, and even deaths triggered by a trivial neighborhood quarrel' (Wang 2014). China has, since the 1950s, been a country dominated by Darwinism. Yet within the framework of Darwinism can one truly use terms such as 'irrational' in reference to such behaviour? Eberle (2007) suggests that military officers who 'commit an egregious injustice' are morally guilty of their actions' (492). He argues that officers who are trained in the concept of the 'just war' should also be given the leeway to act according to their own consciences, and even disobey orders they feel to be immoral. But who decides what is immoral when survival is at stake?

Theologians such as Augustine, Aquinas and Luther would be at home in addressing both of these situations. They would point, first of all, to the essentially universal nature of right and wrong that would lead to these situations being evaluated as ones of a moral character. Humans react against wanton violence because the 5th commandment is written on men's hearts.[153] Yet in some humans the instinct to do the right is lacking or faulty, and in others it has been corrupted by the environment and bad teaching. Thus humans, made to be immoral, sometimes act out in immoral ways. Sometimes even systems such as governments can encourage immoral behaviour themselves. Christian orthodoxy explains both the existence of conscience and why it often fails.[154]

153 'You shall not murder' (Exodus 20:13, ESV).

154 'Using nature as our guide, we may arrive at conclusions that are in direct opposition to what religion teaches, for our use of nature is shaped by numerous assumptions and interpretations' (Dubois 2008:214).

The Neo-Darwinist, faced with the same question, finds it more difficult to join the conversation. Couldn't the irrational behaviour in China be influenced by survival instincts? Isn't it perhaps in human nature itself to wage war? Are 'just' and 'best' necessarily the same thing? Darwin himself struggled with this question, and whether acting morally might in fact be injurious to the human race (Darwin 1871:168-169). Richards (2000) points out that 'science cannot offer a “why,” because from the position of a strict materialist there is no why' (17). Street (2006) also argues that there is a difficulty for strict materialists in pointing to any particular behaviour as irrational. Chesterton (1934) wrote that 'Darwinism can be used to back up two mad moralities, but it cannot be used to back up a single sane one. The kinship and competition of all living creatures can be used as a reason for being insanely cruel or insanely sentimental; but not for [example] a healthy love of animals' (249).

4.6 Conclusion

Christian theology sees God as the foundation for all human ethics, and as the giver of what has been called the human conscience. Theologians still struggle with the question of whether God is good because goodness is an ideal to which even God is conformed, or whether an action is good in itself because willed by God. There is also debate over whether the lack of ethical uniformity across cultures is a sign against the Christian theological view. Finally, there are those who argue against theism itself and so disregard the Christian position on conscience.

Neo-Darwinists believe that all life arose on the basis of natural laws embedded in nature itself. The debate, then, is how such a natural process could lead humans to access universal, objective moral truths, and how such truths might be grounded. There are those who believe conscience itself is a sign against the idea of undirected evolution. Others believe that science, notably quantum physics, points to a new and better understanding of the mind than strict neodarwinists have heretofore contemplated.

There is no question that the orthodox Christian understanding of conscience has points of agreement and convergence with the understanding of Neo-Darwinists. Conscience has both an instinctual and a rational component, and both are grounded in human nature and shaped by the environment in which humans live, move and have their being. There also significant points of divergence. The most significant is whether a deity who stands

outside and above creation is responsible for the origin of life. Whether the Christian holds to some form of theistic evolution, or to the account given in Scripture, he will find himself in conflict with the positivist and naturalist Neo-Darwinist who, in the words of Voltaire, has no need of the conjecture of a deity. A second is whether such a deity is the ground for the morality to which the conscience seems to point.

If the Christian is to provide an effective apologetic for her view of the conscience, she could start from the common ground shared with Neo-Darwinists and then proceed to the areas of conflict. Many scientists have never thought to question why the universe should display observable regularities; in other words, why should science be possible at all? How can we know, for example, that the charge of the electron will remain negative and the charge of the proton positive at all points in the future? How can we, scientifically, know that the regularities observed in nature hold at all points in time and space?

She could then continue on to a conversation regarding common-sense notions about morality, and how Neo-Darwinism in many respects undermines 'common sense.' If morality is purely subjective, then there can never be any true 'oughts' in the world. Rape, theft, or murder: none are truly 'wrong' in any definitive sense. Science strives to arrive at conclusions that 'make sense.' A conclusion that does not 'make sense' is not always wrong, but it ought to be suspect.

In conclusion, there are important starting points for a conversation on the function and origin of conscience in the human race. But those starting points cannot help but lead to the important points of divergence, where Christian theology remains a powerful corrective to scientific theories that go beyond the scope of simple empirical observation or, in some cases, contradict observation.

Chapter 5: Conclusion

5.1 In All Good Conscience

This work set out to examine the historical Christian tradition of conscience and natural law, and to compare and contrast that realm of thought with newer Neo-Darwinian explanations of the human moral compass. Even before the advent of Christianity in the western world, people looked to philosophers to explain how one ought to behave. Greek thinkers such as Aristotle and Plato, and Romans such as Cicero and Seneca, gave serious thought to what it means to be a moral person. They were interested not simply in propounding their own ethics, but in basing those ethics in the human condition and in some cases even connecting morality with the greater laws of the cosmos.

Early Christian thinkers were aware of this tradition, and incorporated some of its ideas in their own theologies of natural law and conscience. They believed firmly that the God who incarnated himself in Jesus of Nazareth also established laws to which all people, not just Christians, were inwardly directed to conform themselves. From early writers such as Justin Martyr and Clement of Alexandria, through Augustine, Aquinas, Luther and Calvin, all significant Christian theologians have remarked at some point in their writings on the 'law written on the heart' by God and written about by Paul in Romans 2:14-16.

But with the advent of the Darwinian and, later, Neo-Darwinian explanation for the origin of life, many began to question the idea that the human conscience was a divine or metaphysical artefact. Perhaps the conscience is, like all life, a result of evolutionary processes, and has some survival value for a species. If that is the case, then perhaps the human urge to act in a certain way is nothing more than an evolutionary instinct, a survival mechanism to be ignored as no longer relevant in our modern world.

5.2. The Main Problem

The western world was long influenced by Christianity and its view of what is moral and ethical. At a minimum, people accepted the basic Christian view that the conscience somehow connected humanity within a divine law governing behaviour. Over the last two centuries, however, Christianity or religion of any kind has influenced western thinking far

less than has what Tauber calls the 'scientific consciousness.'[155] Darwinism has played no small role in this shift of thinking.[156] There is no point in ignoring this reality. If Christians are to engage western culture in a meaningful way, they must be able to interface with those shaped by Darwinistic thought.

This work sought to examine both the Christian theological view of conscience over several centuries, as well as the approach that Darwin and Neo-Darwinists have taken to explain the nature of the human conscience. The hope was that an apologetic direction could therefore be offered for Christians. This direction would be useful both for those who hold to traditional Christian views of human origins, as well as for those Christians who are agnostic on the exact mechanics of life's origin. The main problem was addressed through the lens of the following sub-problems.

5.3. The Sub Problems

5.3.1. Christian Theology and the Conscience

The first set of sub-problems had to do with the Christian theological understanding of conscience and natural law over the centuries. A close reading of Romans 2:14-16 revealed the importance of rightly understanding the words συνείδησις (conscience), ἔθνη (nations), and νόμος (law). It seems most likely that Paul meant to use 'conscience' as the human ability to reflect critically on one's past, although the usage of this word would shift moving forward through Christian history. The word 'nations', with noted exceptions, refers to all outside the Jewish nation. The 'law' as used in Romans 2:14-16 refers both to the precepts given by God to Moses at Sinai (which non-Jews do not possess) and also to a set of ethical precepts against which behaviour can be judged (the 'law' written on the hearts of all people).

Christian thought over the centuries has built on Paul's teaching in Romans. Throughout the early church writers there is a sense that the existence of the conscience is evidence of the Lord incarnated in Jesus Christ being the God of all people, and not simply a Jewish

155 'Scientific consciousness dominates Western culture, not only in the practicalities of people's everyday lives, but with respect to our most basic notions of reality and objectivity. Science also influences how Westerners regard themselves-that is, as animal creatures, rational thinkers, or elements of the entire cosmos. In short, science has shaped the West's world view, and, increasingly, the rest of mankind's' (Tauber 1999:479).

156 'The degree to which biology defines human nature - for example, the degree of genetic determinism that might program complex human behavior - has a profound influence on ethics' (Tauber 1999:480).

God. The conscience is a human point of contact with the divine outside of the special revelation of Scripture. It is what enables God to hold all people accountable for their actions. By the time of Aquinas, and then in the time of Luther and Calvin, the question of whether conscience is more instinctual or rational is raised more explicitly. The conclusion seems to be that, from a Christian perspective, the conscience has both an instinctual and rational component, even if there is disagreement on the degree to which each plays a role. There is also disagreement over whether the conscience can lead one to a full understanding of what might be called 'natural law,' or whether it simply points people toward good and away from bad. But in either case, the conscience is seen as a God-given gift to all people regardless of religious profession.

5.3.2. Darwin, Neo-Darwinists and the Conscience

The second set of sub-problems dealt with Darwin's approach to conscience, and that of his successors. The basic assumption of Darwin still holds within Neo-Darwinism, which is that all life on earth is the result of nature selecting out forms of life better able to survive and reproduce from those not able to do so. Darwin was unsure of exactly how one organism might differ from another in terms of survival ability. With the discovery of DNA and the advent of modern genetics, evolutionary biologists believe that it is random genetic mutations that cause one organism to have a survival advantage over another. This addition of genetics to Darwin's original hypothesis has given rise to what is known as the modern evolutionary synthesis, or Neo-Darwinism.

Neo-Darwinists believe that the human conscience likely developed because it conferred a survival advantage on humans or some animal predecessor to humanity. Darwin himself believed that an ability to cooperate would enable a species to out-survive other species who were unable to work together. Because Darwin believed that acquired or learned traits could be inherited, this idea of cooperative animals being selected for survival made sense. The modern synthesis, however, knows of no way for acquired traits or learned behaviour to be passed on directly to offspring. Therefore a major conundrum for evolutionary biologists is explaining how social cooperation can be tied to a gene or specific genes. Furthermore, the entire concept of Neo-Darwinism revolves around the idea of survival. Yet conscientious behaviour often leads to people sacrificing themselves for someone else. How can the desire to sacrifice for another confer a survival advantage?

Three possible explanations offered by Neo-Darwinists are kinship protection, reciprocal altruism, and group selection. The concept of kinship protection suggests a member of a species might sacrifice him or herself for another, possibly younger, member. Species that have this sort of behaviour imprinted in their genes would be more likely to survive than ones who did not protect one another. Reciprocal altruism suggests that one member of a species might help another in order to receive some benefit in return. Group selection suggests individuals that protect and serve others who are 'like them' would survive better than those who are selfish and uninterested in protecting the group. In any case, most evolutionists agree that the conscience is a relic of evolution, something which permits a race to survive and thrive. It has no objective value beyond, or greater than, this purpose.

5.3.3. Critiquing Christian Theology, Neo-Darwinism, and Conscience

The last set of sub-problems involved a critique of each of these positions, along with a comparison of each to the other. Does the Christian theological position still hold up under the scrutiny of those with an naturalistic scientific worldview? Does the Neo-Darwinist position give a robust explanation of the function and origin of conscience, or is it still lacking? How do each of these views compare to the other, and what are the similarities and dissimilarities?

One of the main critiques of the Christian theological position is that human morality is not consistent in all people, but shows considerable variability across cultures. Some in the past and even today accept slavery as a part of life, while to others the idea of enslaving another human being is repugnant. Sexual mores also differ, with one culture forbidding homosexual behaviour while another protects it by law. The counter to this critique is that all human cultures have some taboos surrounding behaviour towards others and regarding sexual behaviour. Though the details might differ, the general principles remain.

The critique of the Neo-Darwinist position follows two main lines. The first is whether the modern synthesis can truly explain the origin of the human mind, or indeed other complex features of organic life. There are those, first of all, who believe that the human brain needs to be considered a quantum mechanical system. If human self-consciousness turns out to be more mysterious than might have been thought, might the conscience also be so as well? There are also some who remain sceptical of the modern synthesis' explanation that all features of life have arisen through natural selection acting on random mutations.

Some of the extremely complicated features present in living organisms do not easily lend themselves to Neo-Darwinian explanations. Before Neo-Darwinists can be certain about how the human conscience arose, they need to be able to better explain the origin of the human mind.

The second critique of Neo-Darwinism can also be a critique of Christian theology. It has to do with the objective nature of ethics and morality. The modern evolutionary synthesis suggests that the human conscience is little more than a feature of existence that provided survival value for the species. If that is the case, then morality has no objective nature and what is 'wrong' for one person may not be wrong for someone else, or indeed truly 'wrong' for anyone. Christian theology has claimed that only the divine origin of the conscience vouchsafes an objective nature of good and evil. But some philosophers have asked whether this is the case. They point back to an old theological argument over whether God is good because he wills what is good, or is something good because God wills it? If the former, then an objective good can exist without God. If the latter, than 'good' and God's will become synonymous. But what if God's will is not truly good?

In the case of Neo-Darwinism, while its explanation of conscience does not rule out the existence of an objective ethical reality, it is difficult to see how evolution would have pointed conscience towards that reality. In the case of Christianity (or any religious philosophy in general), if conscience is given by God, then what frame of reference could be used for judging God's law as good or evil? In some ways, both Neo-Darwinism and Christians end up debating on this point, but the debate takes place in the realm of philosophy and theology, not science.

There are three main points of convergence between the Christian theological and evolutionary view of the conscience. The first is a basic acknowledgement that science itself would be impossible without a belief in the orderliness of the universe. While some believe that modern science has developed a model of the universe that no longer raises any metaphysical questions (Richards 2000), others believe that serious questions still remain (Meyer 1999). Where, in fact, do the laws of nature come from? On what basis can scientists trust that those laws hold always and everywhere? Given that the function of the brain remains somewhat mysterious, can scientists trust human observation to provide reliable information about the world? Both Christian theologians, explicitly, and scientists, implicitly, accept that we live in a universe in which science is possible.

The second point of convergence is the belief widely held within orthodox Christian theology and among Neo-Darwinians that the conscience is composed of both rational and instinctual components. There is, in fact, an ongoing debate within both communities regarding the relative influence of each. Within the Christian community, there are important theologians such as Thomas Aquinas (1947) who seem to emphasize the role of reason. Others, notably Martin Luther, emphasize the instinctual nature of conscience. Within the Neo-Darwinist camp, those such as de Waal (2006) who compare human moral behaviour to animal behaviour also emphasize the instinctual aspect of ethics. Others, such as MacLean (Hastings 2006), see reason as playing a role that has sometimes been downplayed.

Third, there is convergence on the idea that while nature plays and important role in the form of the conscience, nurture in the form of explicit teaching and implicit environmental influence also play a significant role. From Justin Martyr to Augustine, Aquinas to Luther and Calvin, Christian theology has recognised that God supplies a compass that points toward the Good. However human culture and learning can act as a 'magnet' sitting near the compass, rendering it less effective. Likewise Neo-Darwinism recognises that while genetics may provide the raw material of human nature, the brain's hardware if you will, it is environment and learning that provide the brain's software.

There are also significant points of divergence, especially with regards to the origin of the mind and conscience and, once again, the objective character of ethics. The first has to do with the origin of life itself. All orthodox Christian theologians see the Triune God as the ultimate point of origin of all life. The human conscience, then, comes in some form from God. Neo-Darwinists, on the other hand, believe that all life arose as a result of undirected causes purely internal to the workings of the universe itself.

Second, Christian theology fits the conscience into wider philosophical answers to the problem of evil in the world. The moral compass present in human beings points not only to the Creator, but also to the fallen state of humanity. Traditional, orthodox theology both explains why there is a general sense of justice present in almost all people across cultural lines, and why that sense is not always followed. Neo-Darwinists, however, find their explanations of the conscience have a limited scope. What feels right for one person may not be applicable to someone else, or it may no longer have the survival value it once did.

5.4. Hypothesis

The hypothesis at the beginning of this work, that the Christian theological view of conscience is not radically opposed to the Neo-Darwinist understanding of the same, has been demonstrated to be fairly accurate. While there are points of divergence between the two worldviews on the question of the human moral compass, there are also points of convergence which could serve as loci for dialogue.

5.5 Going Forward

There are a few avenues of future research on this topic worth pointing out. First, the science of the mind continues to develop and in many ways is in its infant stages. New discoveries will be made and old theories will be adjusted and perhaps overturned. As that happens, Christians will once again need to evaluate the state of science and compare and contrast it with our existing theology. Modern science seeks to play an ever-wider role in society, providing normative prescriptions for human behaviour and no longer simply describing that behaviour.[157] There will be an ever-increasing need for Christians who can speak the language of science, and hold scientists accountable to their own principles. If a scientist holds to a strict positivism and naturalism, for example, do her conclusions go beyond what can be observed?

One might, for example, observe specific processes within the brain that would seem to mimic the functioning of a conscience. That is something which can be observed. The conclusion, however, that those mechanisms arose over millions of years of adaptation goes beyond observation into the realm of conjecture and extrapolation. Extrapolation of data is an important part of the scientific enterprise, but it does not provide the same level of scientific explanation of a direct observation. Theologians need to be able to distinguish between scientific conclusions based on observable data and those which are based on extrapolation into history, into the future, or into realms that are currently beyond any direct observation (parallel universes, for example).

157 Consider Tauber (1999) 'When science is applied to the social domain, it shifts from its epistemological function (i.e., knowing nature) to a role in a different arena, one that is heavily laden with value judgements, cultural history, and political forces. In this context, science becomes invested in the moral domain. In other words, the boundary between what is and what ought to be-that is, between ontology and ethics-is continually blurred as science assumes a greater and greater dominance in discussions of how human biological character might determine social behavior' (481) and 'The autonomy of science is being eroded as a result of a growing public awareness that the laboratory is not a free-standing enterprise but is socially based and subject to the needs and values of its supporting culture' (484).

Second, theologians within the Protestant tradition are revisiting the idea of conscience and natural law as important theological concepts. This has been an area of theology neglected by Protestants for some time, but which is now being revisited (Braaten 2011). The research presented here did not delve too deeply into the view of post-Reformation theology, or the ideas now being developed by modern theologians. It would be worthwhile to consider those ideas and evaluate them in light of contemporary scientific views on the conscience.

The Scriptures cannot be broken; so says our Lord Jesus (John 10:10). But the interpretation of certain passages has changed over the centuries. It is no longer possible to interpret Acts 1:9 as many English translation do, implying that Jesus literally travelled up into the sky so to reach the domain of God in heaven. Carl Sagan once mocked any Christian who would hold to that idea, calculating that even travelling at the speed of light Jesus would not even have left our portion of the galaxy yet (McSwain 2012). A closer exegesis of the text, however, reveals that the ascension is not a strict 'going up' but rather a transference of some other kind, perhaps into a greater dimensional realm beyond our limited 3-D perception. Scripture is never wrong; but our interpretations can err. Theologians in dialogue with science should always be aware that, as our limited understanding of the world expands, so too will our understanding of God's Word.

References

Allis, CD. Jenuwein T. and Reinberg, D. 2007. *Epigenetics*. Cold Spring Harbor, N.Y.: Cold Spring Harbor Laboratory Press.

Aquinas, T. 1947. *Summa Theologica*. Translated by Fathers of the English Dominican Province. Online Book. http://www.ccel.org/ccel/aquinas/summa, 2013-11-14.

Augustine, 2001a. Confessions. *The Confessions and Letters of St. Augustine, with a Sketch of his Life and Work.* Edited by Philip Schaff. Online Book. http://www.ccel.org/ccel/schaff/npnf101.html, 2013-11-12.

—2001b. The Enchiridion. *On the Holy Trinity; Doctrinal Treatises; Moral Treatises* Edited by Philip Schaff. Online Book. http://www.ccel.org/ccel/schaff/npnf103.html, 2013-11-12.

Babcock, W. 1988. Augustine on Sin and Moral Agency. *Journal of Religious Ethics* 16(1): 28-55.

Backus, I. 2003. Calvin's Concept of Natural and Roman Law. *Calvin Theological Journal* 38, p.7-26

Baker, R. (ed.) 2011. *Natural Law: A Lutheran Reappraisal*. St. Louis, MO: Concordia Publishing House.

Ballor, J. 2006. Christ in Creation: Bonhoeffer's Orders of Preservation and Natural Theology. *The Journal of Religion*, 86(1), 1-22.

Beauregard, M. 2012. *Brain Wars: The Scientific Battle Over the Existence of the Mind and Proof That Will Change the Way We Live our Lives.* HarperOne: New York.

Bekoff, M. 2001. Science, Religion, Cooperation and Social Morality. *BioScience* 51(3), 171. Accessed online at http://www.jstor.org/stable/10.1641/0006-3568%282001%29051% 5B0171%3ASRCASM%5D2.0.CO%3B2, 2014-05-02.

Black, M. Martini, C. Metzger, B. and Wikgren, A. 1997. *The Greek New Testament*. Federal Republic of Germany: United Bible Societies.

Bockle, F. 1966. *Law and Conscience*. New York: Sheed and Ward.

Bower, B. 1992. Monkeys Deal Blow to Silent Cheaters. *Science News*, *142*(25/26), 423. Accessed from http://dx.doi.org/10.2307/4018023, 2014-02-05.

Bowles, S. 2012. Warriors, Levelers, and the Role of Conflict in Human Social Evolution. *Science*, *336*(6083), 876-879. Accessed from http://dx.doi.org/10.1126/science.1217336, 2014-02-05.

Boyd, GA. and Eddy, PR. (eds.). 2002. *Across the Spectrum: Understanding Issues in Evangelical Theology*. Baker Academic: Grand Rapids.

Braaten, C 2011. A Lutheran Affirmation of the Natural Law. In R Baker (ed.), *Natural Law: a Lutheran Reappraisal*, 17-38. St. Louis, MO: Concordia Publishing House.

Budziszewski, J. 2003. *What We Can't Not Know: A Guide*. San Francisco: Ignatius Press.

Calvin, J. 1989. *Institutes of the Christian Religion*. Translated by Henry Beveridge. Online Book. http://www.ccel.org/ccel/calvin/institutes, 2013-11-14.

—1849. *Commentaries on the Epistle to the Romans*. Translated by John Owen. Online Book. http://www.ccel.org/ccel/calvin/calcom38, 2013-11-15.

Chamberlain, P. 1996. *Can We Be Good Without God?: A Conversation About Truth, Morality, Culture and a Few Other Things That Matter.* Intervarsity Press: Downers Grove, IL.

Charles, JD. 2011a. Foreword. In R Baker (ed.), *Natural Law: a Lutheran Reappraisal,* xiii-xviii. St. Louis, MO: Concordia Publishing House.

—2011b. *Retrieving the Natural Law: A Return to Moral First Things*. Grand Rapids, MI: William B. Eerdmans Publishing Company.

Chester, S. 2006. Paul and the Introspective Conscience of Martin Luther: The Impact of Luther's Anfechtungen on His Interpretation of Paul. *Biblical Interpretation* 14 (5), 508-536.

Chesterton, GK. 1934. *Orthodoxy.* London: William Clowes and Sons.

Chemnitz, M. 1989. *Loci Theologici Vol. 1*. St. Louis, MO: Concordia Publishing House.

Chrysostom, J. 2001. Homilies on the Epistle to the Romans. *Saint Chrysostom: Homilies on the Acts of the Apostles and the Epistle to the Romans*. Edited by Philip Schaff. Online Book. http://www.ccel.org/ccel/schaff/npnf111.html, 2013-11-12.

Clark, WR. and Grunstein, M. 2000. *Are we hardwired?: the role of genes in human behavior*. Oxford: Oxford University Press.

Clement of Alexandria, 2001. The Instructor. *Fathers of the Second Century: Hermas, Tatian, Athenagoras, Theophilus, and Clement of Alexandria*. Edited by Philip Schaff. Online Book. http://www.ccel.org/ccel/schaff/anf02, 2013-11-12.

Collins, F. 2006. *The Language of God*. New York: Free Press.

Colver, A. 2011. According to Nature, Adiaphora, and Ordination. In R Baker (ed.), *Natural Law: a Lutheran Reappraisal*, 249-266. St. Louis, MO:Concordia Publishing House.

Craddock, N. 2013. Psychiatry Needs its Higgs Boson Moment. *New Scientist*, 29 April 2013. Accessed online at http://www.newscientist.com/article/mg21829140.200-psychiatry-needs-its-higgs-boson-moment, 2013-05-13.

Craig ,WL. 2011. *Is the Foundation of Morality Natural of Supernatural*. Accessed online at: http://www.reasonablefaith.org/is-the-foundation-of-morality-natural-or-supernatural-the-craig-harris, July 29, 2014.

Darwin, C. 1871. *The Descent of Man*. London: John Murray. Accessed from http://darwin-online.org.uk, 2014-03-18.

Davies, P. 1992. *The Mind of God: Science and the Search for Ultimate Meaning.* London: Penguin Group.

Dawkins, R. and Dennett, DC. 1999. *The Extended Phenotype: The Long Reach of the Gene* (Rev. ed.). Oxford: Oxford University Press.

Deane-Drummond, C. 2007. Plumbing the Depths: A Recovery of Natural Law and Natural Wisdom in the Context of Debates about Evolutionary Purpose. *Zygon* 42(4), 981-998.

de Lazari-Radek, K. and Singer, P. 2012. The Objectivity of Ethics and the Unity of Practical Reason. *Ethics* 123(1), 9-13. Accessed online at http://www.jstor.org/stable/10.1086/ 667837, 2014-02-05.

De Waal, FB. 2012. The Antiquity of Empathy. *Science*, *336*(6083), 874-876. Accessed from http://dx.doi.org/10.1126/science.1220999, 2014-02-05.

De Waal, FB. 2006. Morally Evolved: Primate Social Instincts, Human Morality, and the Rise and Fall of "Veneer Theory". *Primates and philosophers: how morality evolved* (pp. 1-59). Princeton, N.J.: Princeton University Press.

Dubois, JM. 2008. Is Anaesthesia Intrinsically Wrong? On Moral Absolutes and Natural Law Methodology. *Christian Bioethics* 14(2), 206-216.

Eberle ,CJ. 2007. God, War and Conscience. *Journal of Religious Ethics* 35(3) 479-507.

Edsten, E. and Richerson, P. 2007. Review: Principles-and-Parameters Redux. *American Scientist*, 95(1), 81-83. Accessed from http://www.jstor.org/stable/27858908, 2014-02-05.

Euripedes, 1910. *Orestes*. Translated by E.P. Coleridge. Online Book. http://www.sacred-texts.com/cla/eurip/orestes.htm, 2013-11-11.

Fink, L. 2002. Guth's Grand Guess. *Discover* April 2002. Accessed online at http://discovermagazine.com/2002/apr/cover, 2014-05-27.

Gottlieb, G. 2001. *Individual Development and Evolution*. Mahwah, NJ: Lawrence Erlbaum

Associates.

Grabill, SJ. 2006. *Rediscovering the Natural Law in Reformed Theological Ethics*. Grand Rapids, MI: William B Eerdman.

Grobien, G. 2011. What is Natural Law? Medieval Foundations and Luther's Appropriations. In R Baker (ed.), *Natural Law: a Lutheran Reappraisal*, 17-38. St. Louis, MO:Concordia Publishing House.

Harris, S. 2010. *The Moral Landscape: How Science Can Determine Human Values*. Free Press: New York.

Hastings, P. Zahn-Waxler, C. and McShane, K. 2006. We Are, by Nature, Moral Creatures: Biological Bases of Concern for Others. In *Handbook of Moral Development* (pp. 483-516). Mahwah, NJ: Lawrence Erlbaum Associates.

Hauert, C. 2013. Mathematical Models of Cooperation. In *Evolution, Games, and God: the Principle of Cooperation* (pp. 115-131). Cambridge, MA: Harvard University Press.

Hauser, M. 2013. The Moral Organ. In *Evolution, Games, and God: the Principle of Cooperation* (pp. 253-272). Cambridge, MA: Harvard University Press.

Hogan, L. 2006. "Synderesis, Suneidesis" and the construction of a theological tradition. *Hermathena* 181, 125-140.

Jewett, R. 1971. *Paul's Anthropological Terms: A Study of Their Use in Conflict Settings*. Netherlands: E.J. Brill.

John Paul II, 1995. *Veritas Splendor*. Online Encyclical Letter. http://www.vatican.va /holy_father/john_paul_ii/encyclicals/documents/hf_jp-ii_enc_06081993_veritatis-splendor_en.html, November 19, 2013.

Johnson, DDP. 2013. The Uniqueness of Human Cooperation. In *Evolution, Games, and God: the Principle of Cooperation* (pp. 168-185). Cambridge, MA: Harvard University Press.

Kahane, G. Wiech, K. Shackel, N. Farias, M. Savulescu, J. Tracey, I. 2011. The neural basis of intuitive and counterintuitive moral judgment. *Social Cognitive and Affective Neuroscience*. 7(4): 393-402.

Kahn, JRPH. 2006. Nature and Moral Development. In *Handbook of Moral Development* (pp. 461-482). Mahwah, NJ: Lawrence Erlbaum Associates.

Killen, M. and Smetana, JG. 2006. Introduction. In *Handbook of Moral Development* (pp. 1-4). Mahwah, NJ: Lawrence Erlbaum Associates.

Kirkwood, TM. 1990. *Concern for Others: a New Psychology of Conscience and Morality*. London: Routledge.

Kittel, G. 1964. *Sigma*. Theological Dictionary of the New Testament (Vol. VII). Translated and Edited by Geoffrey W Bromiley. Grand Rapids, MI: William B Eerdmans Publishing Company.

Kittel, G. 1985. *Theological Dictionary of the New Testament (Abridged)*. Translated and Edited by Geoffrey W Bromiley. Grand Rapids, MI: W.B. Eerdmans.

Klug, EFA. 1984. The Doctrine of Man: Christian Anthropology. *Concordia Theological Quarterly* 48(2-3): 141-152.

Korsgaard, C. 2006. Morality and the Distinctiveness of Human Action. In *Primates and Philosophers: How Morality Evolved* (pp. 98-119). Princeton, N.J.: Princeton University Press.

Koukl, G. 2012. *Did Morals Evolve?* Retrieved from http://www.str.org/articles/did-morals-evolve-2#.U9f_FPldV8E, July 29, 2014.

Kries, D. 2002. Origen, Plato and Conscience ("Synderesis") in Jerome's Ezekiel Commentary. *Traditio* 57, 67-83.

Laden, G. 2008. *Expelled Dishonesty and Darwin*. Accessed online from http://scienceblogs.com/gregladen/2008/04/20/expelled-dishonesty-and-darwin, 2014-03-18.

Lewontin, RC. 1992. *Biology as Ideology: the Doctrine of DNA*. New York, NY: HarperPerennial.

Lisle, J. 2009. *Ultimate Proof of Creation*. Green Forest, AR: Master Books.

Luther, M. 1991. *Luther's Small Catechism with Explanation*. St. Louis: Concordia Publishing House.

—1999a. How Christians Should Regard Moses. *Luther's Works, Vol. 35: Word and Sacrament I*. Edited by J. J. Pelikan, H. C. Oswald, and H. T. Lehmann. Philadelphia: Fortress Press.

—1999b. Lectures on Galatians 1519. *Luther's Works, Vol. 27: Lectures on Galatians, 1535, Chapters 5-6; 1519, Chapters 1-6*. Edited by J. J. Pelikan, H. C. Oswald, & H. T. Lehmann. Saint Louis, MO: Concordia Publishing House.

Martyr, J. 2001. Dialogue with Trypho, a Jew. *The Apostolic Fathers with Justin Martyr and Irenaeus.* Edited by Philip Schaff. Online Book. http://www.ccel.org/ccel/schaff/anf01, 2013-11-12.

Mass, K. 2011. Natural Science, Natural Right, and Natural Law: Abortion in Historical Perspective. In R Baker (ed.), *Natural law: a Lutheran Reappraisal*, 221-234. St. Louis, MO:Concordia Publishing House.

Marsonet M. 2002. Positivism. *Interdisciplinary Encyclopedia of Religion and Science*. Accessed online at http://inters.org/positivism, 2014-12-18.

McInerny, R. 1987. Aquinas's Moral Theory. *Journal of Medical Ethics*. 13(1), 31-33

McSwain, S. 2012. *Cosmology of the Bible: Where is God?* Accessed online at http://www.huffingtonpost.com/steve-mcswain/cosmology-of-the-bible-where-is-god_b_1654156.html, 2014-12-18.

Meyer, SC. 1999. Return of the God Hypothesis. *Journal of Interdisciplinary* Studies September Issue, Vol. XI, 1-38. Accessed online at www.discovery.org /articleFiles/PDFs/ReturnofGdHypth.pdf, 2014-05-23.

Monin, AS. 1992. On the Definition of the Concepts of Thinking, Consciousness and Conscience. *Proceedings of the National Academy of Sciences of the United States of America*, 89(13) 5774-5778. Accessed online at http://www.jstor.org/stable/2359434, 2014-02-05.

Morris-Martin, L. Buckland, HT. and Cunningham, S. 2012. Can Your Genes “Make You Do It”? *The American Biology Teacher, 74(*9), 652-653. Accessed from http://dx.doi.org/10.1525/abt.2012.74.9.10, 2014-02-05.

Nagel, T. 2012. *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False*. Oxford: Oxford University Press.

Niebuhr, H. Richard. 1951. *Christ and Culture*. London, UK: Harper Torchbooks.

Nowak, M. 2013. Five Rules for the Evolution of Cooperation. In *Evolution, Games, and God: the Principle of Cooperation* (pp. 99-114). Cambridge, MA: Harvard University Press.

Numbers, R. 2007. Science and Christianity in Pulpit and Pew.

Oden, C. (ed.) 1998. *Ancient Christian Commentary on Scripture*. (New Testament VI. Romans). Chicago. Fitzroy Dearborn Publishers.

Outler, AC. 1940. The 'Platonism' of Clement of Alexandria. *The Journal of Religion*. 20(3).

Pearson, T. 2011. Luther's Pragmatic Appropriation of the Natural Law Tradition. In R Baker (ed.), *Natural Law: a Lutheran Reappraisal*, 39-63. St. Louis, MO:Concordia Publishing House.

Penrose, R. 1994. *Shadows of the Mind: A Search for the Missing Science of Consciousness*. Oxford: Oxford University Press.

Pieper, F. 1950. *Christian Dogmatics*, *Vol. II*. St. Louis, MO: Concordia Publishing House.

Porter, J. 1995. *Moral Action and Christian Ethics*. Cambridge, UK: Cambridge University Press.

Poythress, V. 2014. *Chance and the Sovereignty of God*. Wheaton, IL: Crossway.

Preus, RD. 1970. *The Theology of Post-Reformation Lutheranism*. Concordia Publishing House: St. Louis.

Pujol, J. Batalla, I. Contreras-Rodriguez, O. Harrison, B. Pera, V. Hernandez-Ribas, R. Real, E. Bosa, L. Soriano-Mas, C. Deus, J. Lopez-Sola, M. Piffare, J. Menchon, J. Cardoner, N. 2012. Breakdown in the brain network subserving moral judgment in criminal psychopathy. *Social Cognitive and Affective Neuroscience.* 7(8): 917-923.

Rahner K. (ed.) 1975. *Encyclopedia of Theology*: *A Concise Sacramentum Mundi*. Mumbai, India: St. Pauls.

Reinhard, K. 2012. Conscience, Interdependence, and Embodied Difference: What Paul's Ecclesial Principles Can Offer the Contemporary Church. *Anglican Theological Review*. 94(3), 403-428.

Richards, JR. 2000. *Human Nature After Darwin*: *A Philosophical Introduction*. London: Routledge.

Rubarth, S. 2005. Stoic Philosophy of Mind. *Internet Encyclopedia of Philosophy.* Online Book. http://www.iep.utm.edu/stoicmind, 2013-11-12.

Rupe, R. 2011. The Crisis of the Amoral Conscience. *Missio Apostolica* April 2011. Accessed online at http://lsfmissiology.org/wp-content/uploads/2011/04/LSFM-Missio-Apostolica-May-2011.pdf, 2014-05-27.

Ruse, M. 1999. Evolutionary Ethics in the Twentieth Century: Julian Sorely Huxley and George Gaylord Simpson. *Biology and the Foundation of Ethics* (pp. 198-224). Cambridge, UK: Cambridge University Press.

Rutter, M. 2006. *Genes and Behavior: Nature-Nurture Interplay Explained*. Malden, MA: Blackwell Publications.

Schwartz, JM. Stapp, HP. and Beauregard, M. 2005. Quantum Physics in Neuroscience and Psychology: A Neurophysical Model of Mind-Brain Interaction. *Philosophical Transactions of the Royal Society: Biological Sciences* 360(1458), 1309-1327. Accessed online at http://www.jstor.org/stable/30041344, 2014-04-21.

Simpson, G. 2010. "Written on their hearts": Thinking with Luther about Scripture, Natural Law, and the Moral Life. *Word and World*, V30(4): 419-428.

Singer, P. 2005. Ethics And Intuitions. *The Journal of Ethics*, *9*(3-4), 331-352. Accessed from http://dx.doi.org/10.1007/s10892-005-3508-y, 2014-02-05.

Sophocles 1902. *Antigone*. Translated by R.C. Jebb. Online Book. http://www.sacred-texts.com/cla/soph/antigone.htm, 2013-11-12.

Stapp, HP. 2006. Quantum Interactive Dualism II: The Libet and Einstein-Podolsky-Rosen Causal Anomalies. *Erkenntnis* 65(1), 117-142.

Stein, B. 2008. *Expelled: No Intelligence Allowed*. Universal City, Calif.: Vivendi Visual Entertainment.

Stove, D. 1995. *Darwinian Fairytales*. Jackson, TN: Encounter Books.

Street, S. 2006. A Darwinian Dilemna for Realist Theories of Value. *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition*. 127 (1), 109-166. Accessed online at http://www.jstor.org/stable/4321684, 2014-05-23.

Strohm, P. 2011. *Conscience: A Very Short Introduction*. Oxford, UK: Oxford University Press.

Swanson, J. 1997. *Dictionary of Biblical Languages with Semantic Domains: Greek (New Testament)*. Oak Harbor: Logos Research Systems, Inc., 1997.

Tauber, AI. 1999. Is Biology a Political Science? *BioScience* 49:6, 479-486. Accessed online at http://www.jstor.org/stable/10.1525/bisi.1999.49.6.479, 2014-02-05.

Tertullian, 2001. Five Books Against Marcion. *Latin Christianity: Its Founder, Tertullian*. Edited by Philip Schaff. Online Book. http://www.ccel.org/ccel/schaff/anf03, 2013-11-12.

Thomas, RM. 1997. *Moral Development Theories - Secular and Religious: a Comparative Study*. Westport, Conn.: Greenwood Press.

Tomasello, M. Melis, AP. Tennie, C. Wyman, E. and Herrmann, E. 2012. Two Key Steps in the Evolution of Human Cooperation: The Interdependence Hypothesis. *Current Anthropology*, 53(6), 673-692. Accessed from http://www.jstor.org/stable/10.1086/668207, 2014-02-05.

VanDrunen D 2007. Abraham Kuyper and the Reformed Natural Law and Two Kingdoms Tradition. *Calvin Theological Journal* 42, 283-307.

Verbeek, P. 2006. Introduction. In *Handbook of Moral Development* (pp. 423-460). Mahwah, N.J.: Lawrence Erlbaum Associates.

Wang, L. 2014. Ending Irrational Acts in Society. *China Daily (2014-04-16).* Accessed online at http://www.chinadaily.com.cn/opinion/2014-04/16/content_17436803.htm, 2014-05-01.

Wenz, A. 2011. Natural Law and the Orders of Creation. In R Baker (ed.), *Natural Law: a Lutheran Reappraisal*, 79-95 Louis, MO:Concordia Publishing House.

Woloshak, GE. 2011. The Compatibility of the Principles of Biological Evolution with Eastern Orthodoxy. *St.Vladimir's Theological Quarterly* 55:2, 209-231.

Woolcock, PG. 1999. The Case Against Evolutionary Ethics Today. *Biology and the foundation of ethics* (pp. 276-306). Cambridge, UK: Cambridge University Press.

Wright, W. 1998. *Born That Way: Genes, Behavior, Personality*. New York: Knopf.

Wright, N T. 1995. *Romans and the Theology of Paul*. Accessed from http://ntwrightpage.com/Wright_Romans_Theology_Paul.pdf, 2014-12-18.

Young, R. 1997. *Young's Literal Translation*. Bellingham, WA: Logos Bible Software.

Zak, PJ. 2012. *The Moral Molecule: The Source of Love and Prosperity*. Dutton: New York.

—2011. What, Me Care? Young are Less Empathetic. *Scientific American* Jan/Feb Accessed online at http://www.scientificamerican.com/article/what-me-care/, 2014-04-17.

Ziegler, R. 2011. Natural Law in the Lutheran Confessions. In R Baker (ed.), *Natural Law: a Lutheran Reappraisal*, 65-78. St. Louis, MO:Concordia Publishing House.