The Role of the Appeal to the Transcendent in Scholarly Discourse on the Plausibility of the Value-Free Ideal in Scientific Inquiry

By

John Robertson
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Dr. Graham P McDonough, Department of Curriculum and Instruction
Supervisor

Dr. Todd Milford, Department of Curriculum and Instruction
Academic Unit Member

Abstract

This thesis shows how the appeal to the transcendent characterizes aspects of the debate amongst leading contemporary philosophers of science regarding the value-free ideal and the attendant aim of attaining objective knowledge. It compares the positions of leading feminist philosophers of science (Longino and Harding) with influential figures in the historically rooted Western belief who appeal to the transcendent in the pursuit-of knowledge of the necessary and of the contingent. Chapter 2 relates the historically rooted Western belief in appeal to the transcendent in the pursuit of knowledge and includes two components: the pursuit of knowledge of the necessary and knowledge of the contingent. Chapter 3 assesses how contemporary leading feminist philosophers of science have contended with beliefs of influential 20th century thinkers (Weber, Kuhn and Quine) regarding this problem. Through this comparison, I provide commentary on how current leading philosophers of science have addressed the value-free ideal issue through the prism of appeal to transcendent reason as justification, as opposed to the historically rooted appeal to the transcendent itself via reason as justification and how this apparent disparity has bearing on the debate concerning the value-free ideal and the attendant goal of achieving objective knowledge.

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Chapter 1

Accounting for the Religious Roots of the Transcendent as a Necessary Factor in Addressing the Problem of the Value Free Ideal and the Attendant Aim of Objective Knowledge in Educational Scholarship

Increasingly, leading educational scholars within social science are debating the challenges wrought by the lingering allegiances and adherences to the problematic mechanism of the value free ideal in achieving objective knowledge. The value free ideal is the researcher's aim to avoid findings that are justified based on non-epistemic values (Betz, 2013): assumptions (such as those based on emotion, empathy) which undermine cognitive principles of research (such as accuracy, consistency). Particularly problematic principles that ostensibly prevent non-epistemic values from entering the research method and at the same time lead to objectivity are impartiality, the requirement to reduce / eliminate the influence of moral or political values in epistemological inquiry and neutrality, the requirement to avoid the advancement of a particular value in inquiry. These principles of the value free ideal yield to proponents of objectivity the understanding of knowledge as a realizable goal for the scientific community to assess the generalizability of the researcher's claims. The more objective research is, the more impervious it is to the influence of obstructive bias (research that is derived from non-epistemic values that prevents the researcher from using legitimate cognitive criteria), bias that results in a deviation from the conception of knowledge as a generalized, abstract understanding to a lesser, hence, pluralistic or even relativistic rendering. The value free ideal, then, is an ideal of research which holds that it has exclusive claim to objective knowledge as knowledge which not only transcends the respective researcher's particular social location (which, if admitted, could jeopardize accuracy as a comprehensive account that transcends variation of social location), but no less also rejects it as an obstructive bias if it is discerned to inform the research at hand. In this way,

objective knowledge via the value free ideal is an enterprise in which the level of credibility in research is assessed according to its level of adherence to laws of the transcendent as a set of generalized abstract rules.

I shall argue in this thesis that the challenge leading feminist philosophers of science have posed to the value-free ideal is not only the idea that feminist values / background assumptions have epistemic value, but that the greater problem of the extent to which values / background assumptions can and ought to inform research findings must be addressed if an epistemology which adequately reflects the interests of women can emerge. This greater problem, then, becomes a question which concerns the very plausibility of the social scientific aim of objectivity in general and, hence, the general aims of epistemological research in social science. Among other aspects of the aim of objective knowledge, the requirement to establish a research method that transcends the essential epistemological root of experience so as to account for all potential knowers has become particularly problematic. Put another way, if it is to be objective, how can social scientific knowledge account for experience if the latter is an essential epistemological source? As I will show, leading feminist philosophers of science demonstrate that the researcher's concern about the degree to which background assumptions / values ought to amount to the social scientist's conceptualizing experience as a direct source of knowledge (such as social location) cannot be adequately addressed if the belief in the final, mediating authority of reason, via abstract cognitive criteria, is to continue to account for experience so as to achieve a generalized, hence, objective account (thereby rendering experience as a secondary source of knowledge). As a result, experience, in its manifestation by backgrounds assumptions / values, as a direct source of knowledge puts at risk the still common belief in reason as the final mediating

authority to account for how the researcher is to transpose backgrounds assumptions / values for scientific authenticity.

A brief review of the religious roots of the role of background assumptions / values serves to recall how reason, through much of Western history, functioned primarily as an articulation (not the final mediator) of the background assumption / value of the belief in the divine. I submit this review to contextualize, so as to question, the belief that the social science of knowledge ought to be primarily concerned with how sufficiently the researcher can understand experience through a set of abstract, generalized criteria. Is it still plausible for the social scientist to summon her ultimately autonomous mediating power of reason to perform the dual role of both admitting and measuring suitable background assumptions / values as factors in research? Further, might such a discussion not only contribute to the problem of objectivity but, at the same time, encourage social scientists to inquire as to how the epistemological root of experience might be assessed without risking the negation of its very substance?

In recent decades, feminist philosophers of science in the empiricist, standpoint and postmodern schools have been at the forefront of the debate on the problem of whether the value free ideal remains a plausible principle within the attendant, broader aims of seeking objectivity in scientific research; specifically, they raise the issue of what ought to qualify as epistemically worthy and how a feminist perspective, hence, may bear on the credibility of any proposals that a value free ideal has in this discussion. Discourse amongst leading feminist scholars of these schools of thought suggests that, as the primary prism through which objective knowledge is scientifically attainable, the value free ideal brings with it potential consequences for the educational scholar’s aim of attaining objective scientific knowledge.

Leading feminist scholars within the philosophy of science, such as the empiricist Helen Longino, standpoint proponent Sandra Harding and postmodern thinker Susan Hekman, have not only discussed the problem of whether the value free ideal is sustainable as a plausible principle to distinguish between what has conventionally been understood as cognitive and non-cognitive criteria, but also as a major factor in the problem of how scholars ought to conceptualize knowledge and how it is to be acquired. In the first instance, Longino argues that, as a scientific matter, the value free ideal can be addressed through improvements to empirical research criteria in the scientific method, such as including values that are feminist (values that would be otherwise misunderstood as non-cognitive). Harding, however, argues that the value free ideal is an epistemological approach that betrays the cognitive interests of women because it is negatively bound by a male-gendered bias prescribed by the parameters of the scientific method itself.

Since these leading feminist scholars within the philosophy of science have framed the problem of the value free ideal as one that should be discussed either as an issue that should only pertain to proponents of the scientific method (as illustrated by Anderson, for example), rendering this ideal as a matter of fine-tuning what ought to amount to having epistemic value via rational discernment, or the problem of the value free ideal as a concern that should be viewed as a broader epistemological issue that must be accountable to the respective researcher's social location (as espoused by Harding, for example), the rooted problem of the relationship between scientific discovery and justification arises; for, if the scientist makes a discovery in her research, how her justification of this discovery accounts for the assumptions / values that guide that discovery inevitably requires clarification regarding the role of values / background assumptions in this process. To what degree, for instance, can / do background assumptions

direct the justification of scientific discovery? Might establishing and defending criteria of justification depend significantly on how it articulates more than independently accounts for discovery? In other words, might criteria of justification, at the very least, actually serve more for the researcher as an *articulation* of the nature of a finding and less as an independent measure of it? The conception of research within social science as value-considered could compete with a conception of research as value-expressed, thereby providing a more fruitful, diverse approach to research that more adequately accounts for the religious historical roots of scientific inquiry. Further, if such a dual conception should be rejected by scholars of social science, this would encourage a corollary account of how cognitive criteria can yet remain a sufficiently independent measure of background assumptions. In so doing, such an account would, thus, repudiate the religiously rooted belief in the plausibility of justification as articulation of discovery.

Since the esteemed power of humankind's rational faculty in epistemological inquiry has a longer historical prevalence in religious scholarship in the West than in the ostensibly exclusive scientific realm (as evinced by forerunners such as Jean- Baptiste Lamarck), the religious roots of the value-free ideal, particularly the role of faith in the transcendent in the discovery of knowledge and its relationship to divine reason as justification, or articulation / expression may prove helpful if educational scholars give them direct attention as root contributors to this debate. To appeal to the transcendent (in its most basic and transparent conception) is to appeal to an epistemological authority that validates the individual's epistemological pursuit by surpassing the individual's immediate experience and, also, appeal to shared experience with another party or to an immaterial source of higher authority which awakens some part of the mind / soul are avenues through which the subject accesses the transcendent. As a foundational root of Western

scientific belief, discovery through faith in the transcendent yields a foundation of discovery for epistemological inquiry to adhere to.

Historically in the West, unlike reason, faith in the transcendent as a foundational vehicle of discovery has not been necessarily reducible to functioning as an instrument of provability, thus, as a guarantor of certainty for the inquiring subject. Nor has reason functioned exclusively as a vehicle of discovery or as a separate entity of justification that discovery does not anchor, hence, inform. Rather, what these influential thinkers shared was the assumption that reason, as a tool for establishing a set of principles, served not to justify discovery from a separate and distinct vantage point of a being disassociated from discovery, but as a faculty in humankind which could best explain and / or illuminate discovery. In this way, there was a lack of distinction between appeal to the transcendent as a source of greater being and appeal to the transcendent as a vehicle for an established set of principles / laws to ensure certainty (such as Plato's appeal to the immortal soul or Aristotle's teleological appeal to the prime mover that enables purpose in nature). However, both conceptions of the transcendent include an appeal to principle, criteria or ability that relieves the individual of her immediate personal experience / conviction as the primary tool of knowledge in discovery and justification to fashion all epistemological queries answerable to one system.

Despite this historical convention, leading philosophers of science such as Longino, Harding and Hekman appear to have accepted the assumption behind the debate on the value free ideal that the central problem is not only the limited power of reason in the inquirer to limit and discern which background assumptions have epistemic value, but the pre-conditional assumption that lies beneath: that discourse on faith in the transcendent itself, as a historically prevalent, essential value in the relationship between discovery and justification of the necessary and the

contingent, is an insignificant factor in this discussion. Do the primary assumptions that face the value free ideal (how to determine which values are to have epistemic import) adequately account for the role of the transcendent in discovery and justification in the Western historical mapping of knowledge as a journey into the necessary and the contingent? Do leading educational scholars within social science need to address this problem? Perhaps Galileo inadvertently articulated this issue of how easy (or how difficult) the challenge is to establish a new direction for epistemological inquiry that seeks to achieve the value free ideal and is yet devoid of appeal to the transcendent: “the intention of the Holy Ghost is to teach us how one goes to heaven, not how heaven goes” (Galileo,1615). Can framing of the problem through focusing on deciding how to determine which values have epistemic import render the problem of the transcendent as a purely secular concern, devoid of religious connotation? Can the contemporary social scientist manage to pursue a conception of objectivity that sufficiently diminishes the significance of appeal to the transcendent itself: a pursuit that is devoid of deference to the contingent and / or the necessary as articulation / expression of the transcendent?

Elizabeth Anderson is among leading feminist philosophers of science, who attempts to address the problem of the value-free ideal by expanding in scope the autonomous agency of the mediating power of the researcher’s rational faculty. For Anderson, the rational faculty of the researcher has the sufficient autonomous agency to both determine which values / background assumptions ought to be adopted into scientific inquiry and mediate their level of influence. In others words, rationality can and ought to continue, not as a subject of concern regarding how it might reside within the researcher’s appeal to the transcendent in the process of discovery and justification, but as its own unique, transcending power to adjudicate the influence of

background assumptions. For example, Anderson asserts social science theorist Max Weber's view that it is the unique vocation of the scientist which endows her with a somehow autonomous agency that accords reason a place within the human mind that is impervious to the extent that, upon execution, it can play a purely instrumental role in inquiry, arbitrating how discovery and justification are to relate and function independently of one another. For, even though "…our ends are given to us by our motives, which are beyond rational criticism…there can be no considerations favoring the choice of one final end over another… reason can only inform us about means to our ends. It cannot guide the choice of final ends" (Anderson, p.6, 2004). In this way, through awareness of their cognitive values, feminists can "provide evidential support for their noncognitive value judgments" (Anderson, p.8, 2004).

In this way, the social scientist asserts, but does not qualify, the abstraction of "motives" as replacement for faith in the transcendent through the now singular primary faculty for inquiry, which is reason; values / background assumptions are admitted, but under the auspices of another faculty. Hence, Anderson argues, "science is value-free if and only if values are science-free" (Anderson, p.7, 2004). This assertion recalls David Hume's influential argument that "reason alone can never be a motive to any action of the will; and secondly, that it can never oppose passion in the direction of the will" (Hume, p. 216, 1739): implicit in both is a lack of qualification as to whether and, if so, how the faculty of reason can yet stand on its own (in an absolute sense or in degree) as a separate and distinct faculty from values / background assumptions. Such a lack of qualification, yet steadfast faith in the monopolizing power of reason recalls William Blake's concern that the nature of such a belief in the ultimately supreme power of reason obfuscates how rooted Western beliefs in the transcendent may still play a significant role in the scientist's epistemological pursuit of discovery and justification. From what

authority, then, does any such claim for this autonomous discernibility gain the scientist's trust (or does this faculty have the power of self-reference?), especially if the enabling value of faith in the contingent and the necessary is dispensable? These essential questions, among others, point to the problem of how factors of objectivity in educational scholarship within social science are to be dealt with if the religious root of faith in the transcendent is left unaddressed.

A brief reference here to a relatively recent period in Western history may provide some context as to how the historically rooted faith in the essential role of the transcendent in epistemological inquiry does not factor significantly in the discourse amongst these leading scholars, on the problem of the value-free ideal and the attendant challenges this brings to the broader debate on how objective knowledge in social science ought to be understood. The record of influential thinkers of the Enlightenment period shows a development in recent history of an intellectual movement that was indebted to, but distinct from, the intellectual challenges the Protestant Reformation raised against the perceived tyranny of the particular institutions of the Catholic Church. With the Enlightenment came the emergence of an intellectual constructing of religion itself primarily as an essential component of the monopolizing Christian institution. Cast in opposition to this construction were efforts to recognize an inherently separate pursuit of autonomous epistemological inquiry. With the increased belief in humankind's rational ability to discover the workings of nature and efforts of natural philosophers to ensure a role for Christian theology within these discoveries became more pronounced (such as Newton's contention that God was still the earth's author and caretaker), church authority would come to be seen less as a reliable partner in these pursuits, and more as a body called to clarify its position on human ingenuity. (Armstrong 1993). A term of reference to a new group of "Scientists", a term coined by William Whewell in 1834, was a recognition of an emerging trend of publications (such as

Thomas Hicks' *The Christian Philosopher, or the Connection of Science and Philosophy with Religion*) that began to refer to their published authors' work as 'science', no longer denoting 'natural philosophy', a subject that inter-related the study of nature, the universe and reality (Numbers 2009).

The apparent disharmony of the respective scope and aim of science and religion had already gained traction in Europe and in North America (Henry 2012). Despite the efforts of figures of religious institutional authority, such as the Roman Catholic Pope Leo XIII, to recognize and address the poor working conditions of those who suffered from the effects of unrestrained capitalism (1891, para. 1), segments of the working class on both sides of the Atlantic began to see "religion" as an obstacle to progress for worker's rights and advancement in the understanding of nature, respectively towards the end of the nineteenth century (Numbers 2009). Resonant of the Reformation, religion had come to connote for these demographics a menacing and intrusive clericalism that lent less to contributing to human knowledge and more to the social and political power of the church. During this time, religious ways of knowing and theological considerations received increasing criticism as primarily instruments of the church, and dogma to maintain church power. Working class reformist groups, who created publications such as *The Oracle of Reason* and *The Investigator* saw in the Methodist movement and in the Catholic Church as well a corrupt apparatus in general which they could no longer trust to ensure better working conditions but, instead, deluding workers into accepting their inadequate working conditions. From *The Investigator*: "All nature cries aloud against the idea of a benevolent deity. This worse than ridiculous – this vilely pernicious teaching, the atheist rejects with contempt and disgust" (Henry 2012).

Further, in Europe, the beliefs that God played a role in the everyday workings of the world and that human life was a journey of salvation as a component of God's grand plan for humankind was wearing thin. Figures such as Jean- Baptiste Lamarck gained recognition within the reformers' rank; his argument that nature has the capacity within itself to make the world as it is gained much attention and respect: "The theory of regular gradation, or the change of one mode of natural phenomenon into another, without supernatural interference, is in direct opposition to the almost universally received opinions of all countries and ages…yet stripped of religious prejudice, philosophy must admit that the inherent properties of "dull matter…are good and sufficient to produce all the varied, complicated, and beautiful phenomena of the universe" (Henry 2012). What was not as pressing an issue was *how* this "theory of regular gradation" could be stripped of religious foundation, let alone how a religious prejudice would be defined in such a way that distinguishes it from religious foundation. Doing so accounts for the faith in the transcendent that played no small historical role in how knowledge could be attained in Western civilization. Among other areas, this period in history raises the question of how the religious foundational belief in the transcendent as a discerning tool of the necessary and the contingent was replaced with the scientific belief in the inherent and exclusively transcendent nature of the human faculty of reason itself as the final arbiter, hence, exclusive guarantor of knowledge. Though the period of the Enlightenment clearly liberated scientific thought from the dogmatic hegemony of the Christian Church, core beliefs that emerged (such as the embraced Newtonian belief in the mechanical, as opposed to the contingently divine, nature of the cosmos and John Locke's position that human-endowed reason based on experience was the path to knowledge of cause and effect, hence, of God) (Walker, 1985) tended to postulate rather than substantiate how the individual inquirer could autonomously summon the final mediating authority of reason.

The purpose of this thesis is to compare particular Western foundational roots of faith in the transcendent, with reason as executor, in the attainment of knowledge to current leading educational scholarship that contends with the precarious belief in reason as autonomous arbiter in the value-free ideal and what role objectivity ought to have in educational scholarship as a social science. I hope to ascertain how this historical faith in the transcendent may yet inform current leading educational discourse in the attempt to salvage a concept of objectivity that rejects the value free ideal and ponders the outstanding problem of determining the epistemic import of values if a system of epistemological inquiry is to account for all.

There are particularly influential thinkers in Western history whose beliefs espoused postulating a fundamental link between reason and the transcendent in knowledge acquisition, in ways that particularly pertain to leading educational scholarship of feminist empiricists, feminist standpoint theory proponents (FST) and feminist postmodernists on the problem of attaining objectivity via the value-free ideal or through the concept of epistemic privilege. For these notable thinkers, two epistemological tools served as foundational, inextricably bound mechanisms of discovery and justification through which to conceptualize knowledge as a discernment of the necessary and the contingent: faith in a transcendent reality (discovery) and the unique divine reason of humankind (justification or articulation / expression upon investigation of discovery) to exercise this unique belonging to the transcendent. Representative influential proponents of interdependent mechanisms of faith and reason in the necessary are Plato, St Augustine and Descartes; for, these notable thinkers encouraged the belief that human knowledge consisted of a transcendent component that enabled humankind in its individual and collective capacities to discern the immutable, true knowledge from the mutable less true, via divine reason. Plato's contribution was in the foundational blueprint of this belief, particularly

the linkage of faith in divine illumination and divine reason to investigate this faith; St Augustine's contribution was in how he adapted this linkage of Plato's to a Christianized understanding; the shift, as espoused by figures such as Descartes, from belief in the unique faculty of divine reason as both source and agent of autonomous will to an augmented human knowledge of God, establishing the human self as a divine agent / recipient of the reasoning faculty.

Faith in the transcendent and the concordant articulation of divine reason to discern a contingently created universe also deserves comparison with leading educational scholarship of feminist empiricists, feminist standpoint theory proponents and feminist postmodernists on the problem of attaining objectivity via the value-free ideal or through the concept of epistemic privilege. Two thinkers, Aristotle and St Thomas Aquinas, deserve particular attention in this respect. It was Aristotle who espoused faith in the transcendent and the power of divine reason to discern the contingency of the physical world as the basis for human knowledge; St Thomas Aquinas articulated a Christianized belief in a contingent universe, which could be understood through humankind's faith in God and our divinely-endowed ability to reason.

I have noted four major categories, the subject-object dichotomy, the cognitive / non-cognitive and the fact-value distinction, and the relationship between the individual inquirer and the broader community, through which these influential thinkers make claims to achieving a system of epistemological inquiry, categories that influential twentieth century philosophers of science Max Weber, Thomas Kuhn, Willard Quine as well as leading contemporary feminist empiricists, feminist standpoint theory proponents and feminist postmodernists also employ in addressing the problem of the value-free ideal and whether the goal of achieving objective knowledge is sustainable. In the opening chapter of comparison, I will assess how the espoused

faith in the essential role of the transcendent characterizes epistemological inquiry as expressed by notable proponents of the necessary, Plato, St Augustine, Descartes and notable proponents of the contingent, Aristotle and St Thomas Aquinas, through the prism of these four categories. In the second chapter of comparison, by drawing on leading thinkers on the value free ideal discourse amongst twentieth century forerunners Max Weber, Thomas Kuhn and Willard Quine to leading feminist empiricists, feminist standpoint theory proponents and feminist postmodernists, I will assess the major areas of concern regarding the value free ideal in social science research and whether the aim of progress towards objective knowledge is sustainable. As in the first chapter of comparison, I will conduct this assessment under the same categories: the subject / object dichotomy, the cognitive / non-cognitive and fact / value distinction, and the relationship between the individual subject inquirer and the broader community.

In essence, then, the current discourse of leading feminist empiricist, standpoint and postmodern perspectives on the problem of the value-free ideal and the attendant problem of the aim of objective knowledge in social science will be compared with the prominent historical appeal to the transcendent as a source of the necessary and the contingent world views, from which reason can articulate discovery (research findings) and justification (the argument for such findings through submission of theoretical and methodological approaches). I conduct this comparison to afford some historical context that may add context to issues that face leading feminist empiricist, standpoint and postmodernist scholars in addressing the problem of the value-free ideal and the attendant problem of how / whether objectivity ought to be sought as an epistemological pursuit. The feminist empiricist position faces the challenge of ascribing to the faculty of reason in the human being the dual role in epistemological inquiry of serving both as a means of justification and as arbiter of values to account for which values are to have epistemic

import. The position of the feminist standpoint proponent generally faces the problem of how values, as a conventionally understood domain of discovery, are to advance to attain plausibility as the means of justification in epistemological inquiry. The feminist postmodernist perspective, as more a critical vantage point than a positive claim to establishing an epistemological system, calls for a shift in the epistemological aims of social science from focus on objectivity as an aim that accounts for all knowers through a set of cognitive principles that can arbitrate between epistemological discovery (attributable, at least in part, to values) and justification (reason) towards fostering affinity of epistemological aims through a shared concept of difference.

If the broad aim of feminist epistemologists is to continue apace to foster progress and emancipation for women, an accounting of some essential components of epistemological inquiry must be made, particularly how justification is no longer to function as an articulation / expression of discovery. They have largely been at the forefront of efforts to assert background assumptions / values as not only admissible reference points of cognitive criteria in research, but aspects that are to initiate inquiry (such as bifurcation in Feminist Standpoint theory) and / or to be reflected in findings (like heterogeneity for leading feminist empiricists like Helen Longino).

However, there remains the problem of how justification of a finding is to articulate / express discovery if reason is to remain as a somehow principally unique and sufficiently autonomous, detached mental faculty for the researcher (and / or community of researchers) to employ within themselves, functioning as both the final mechanism and mediator that ultimately accords epistemic values their role in inquiry via an ostensibly corresponding set of cognitive principles. For, if the researcher's justification of a finding does not necessarily serve as an adequate articulation of (or bridge to) that finding, of what nature is the discovery? Specifically, how can the woman's actual marginalized condition be accounted for if the experience is

ultimately measured, thus subordinated, by abstract principles? Does the creation of abstract principles in the name of experience (in all its variations of social marginalization) truly correspond to it?

Further, if abstract cognitive principles are to make the final determination on the nature of the marginalized experience of all women in their various social locations, is it not worth investigating whether the aim of this conception of research is unambiguous? For instance, how might one argue (as opposed to assert) that the aim of such a conception of research is to authentically account for experience? Put another way, for what purpose does reason, as the mediating, crosscutting means of understanding marginalized experience, actually serve in epistemological inquiry? The prominent historically religious belief in reason as an appeal to the transcendent as opposed to the apparent contemporary unqualified deference to reason as a transcending power within the researcher her / himself is a question worth asking because the problems facing the value-free ideal, such as the belief in the self-induced autonomous power of reason to mediate epistemic values / background assumption, appear to call for such a question.

Chapter 2

Influential Beliefs on the Role of the Transcendent in Discovery and Articulation as Expressed in Themes of the Necessary and the Contingent

Western history has recorded two central, recurring themes of epistemological inquiry: the necessary and the contingent, both of which have significantly influenced debate on how the value-free ideal and the aim of objective knowledge ought to be understood within educational scholarship as a social science. I explore these themes here so as to afford a proper context through which a new conceptualization of knowledge can emerge in social science. The historical theme of necessity in epistemological inquiry has been the search for knowledge as an inherently objective enterprise through a rational, a priori method of inquiry, ultimately independent of the physical world. The theme of the contingent has been characterized by the general belief in an equally judicious employment of reason and also as an inherently objective enterprise, but to gain knowledge through observation of occurrences in the natural world. Both tracts in their historical roots, however, incorporate faith in the transcendent as an essential component in the pursuit of knowledge. Despite this fact, the role of faith in the transcendent in these approaches does not factor in significantly within current debate on how the value-free ideal and the aim of objectivity for educational scholars within social science ought to be understood. Do they deserve to? Even though the dominant mode of educational scholarship operates as a primarily social scientific empirical enterprise, I seek to discern, by comparing shared factors of the role of the transcendent in epistemological inquiry (within the themes of necessity and contingency) and current debate amongst leading scholars on how the value-free ideal and how the aim of objective knowledge ought to be understood within educational scholarship as a social science, whether the role of appeal to the transcendent via the foundation of the necessary and the contingent in epistemological inquiry has been adequately addressed in

educational scholarship on how the value-free ideal and the aim of objective knowledge ought to be considered. As articulated by influential proponents of the role of necessity in inquiry[1], I will discuss the historical appeal to the transcendent as a rooted epistemological understanding of necessity and contingency within the categories of the shared factors: the subject-object dichotomy, the cognitive / non-cognitive and fact-value distinction, and the relationship between the individual inquirer and the community.

The role that the appeal to the transcendent has played in Western epistemological inquiry, as a rooted epistemological understanding of necessity and contingency, can be traced back at least to the period of the early Christian church (100-700 CE), during which dominant issues of debate on epistemological inquiry centered primarily on how the Christian community would come to understand their relationship to God through Jesus. Attached to this issue was the question whether it was possible for Ancient Greek thought (400-300 BCE) to be (if at all) incorporated into Christian epistemology. The problem for early Christian thinkers was not whether Greek thought had religious qualities or not, or that the power of reason was heretical but, rather, how Greek thought, including the religious sensibilities regarding the soul that consisted therein, would contribute to and not undermine the aims of the early Christian thinkers to build a Christian society that was devoted to God through faith in Jesus. This question was introduced most notably by Tertullian, an early Christian lawyer: "what Relation is there between Athens and Jerusalem? What Communion hath the Academy with the Church?" (Betty, 1722, Ch VII). Could a newly Christian Rome be harmonized with a system of thought that was not based on Christian belief? Tertullian noted the existence of religious belief in Greek thought,

[1] Plato (the relationship between the divine illumination, reason and divine immutability), St Augustine (the relationship between a Christian divine illumination, reason and divine immutability) and Descartes (the relationship between the conviction of reason of the mind and knowledge of God)

but questioned its foundation: “By whom has God ever been found without Christ?” (Betty, 1722, Ch I)). In other words, the early (and subsequent) Christian incorporation, not creation, of divine reason is a helpful historical reference to ascertain religious roots of educational scholarship on how objectivity is to be understood in epistemological inquiry.

Several distinctive features of Ancient Greek philosophy were yet preserved and adopted in early Christian epistemology: features that would articulate the subject-object relationship in humankind’s pursuit of truth which have continued to influence current leading educational scholars within social science on how to understand the value-free ideal and the goal of objective knowledge. One such component which bears on how educational scholarship has religious roots as a foundational component is the belief that the inquiring human subject has the unique capacity to attain knowledge of his / her object of study through the judicious application of the singular faculty of the intellect, reason, to govern all others within him or her. As I will show in this chapter, faith in the exclusively divine power of justification to reason in its a posteriori and a priori applications brought influential thinkers (such as Plato and Aristotle) to augment belief in its supremacy over any other way of knowing. Current leading educational scholars are still contending with this problem: specifically, the extent of the power of reason over the values (background assumptions) that the inquirer brings with her / him into the process to determine appropriate means and ends of inquiry.

Divine Illumination of the Immortal Soul via A Priori Inquiry

Of the several trajectories of the foundational belief of the necessary that have been pursued in Western thought, two cannot be underestimated in their influence on how the value-free ideal and objectivity are to be understood by educational scholars within social science: divine illumination and a priori inquiry. Indicative examples of divine illumination as a

representative feature in the history of Western epistemology are, among others, Plato's theory of forms and St. Augustine's Christian modification of this theory. The positions of these thinkers are central to the development of the Western intellectual foundational understanding of reason as a divine, thus, immutable justification of true knowledge. I will refer to divine illumination as a cognitive means of understanding that relies on faith in supernatural assistance for knowledge to be justified and a priori inquiry as a pursuit of knowledge that consists of pure reason that is independent of sensory experience. My discussion of this component, via these Western thinkers, is to bring focus to the historically rooted appeal to the transcendent so that it may lend context to leading criticism of the value free ideal and the attendant belief in objectivity as attainable through the questionable supremacy of reason as the primary arbiter.

The influence of Plato's work, including his theory of epistemological inquiry, which will be discussed here, is profound. Plato believed that divine illumination makes it possible for human beings achieve recollection to access the true reality of innate, a priori understanding; in other words, a priori reasoning is a process of recovery through recollection. Faith in the immortal soul provides the individual with the ability to reason a priori and, thus, the cognitive foundation to attain objective knowledge: "As the soul is immortal, has been born often, and has seen all things here and in the underworld, there is nothing which it has not learned; so it is in no way surprising that it can recollect the things it knew before, both about virtue and other things" (Cooper, 1997, p. 880). He illustrates, in *Meno,* justification through a priori recollection as divine illumination in his example of a slave boy who learns the geometrical problem of how to double the area of a square, with little external assistance. Plato describes this as a process of education itself: "the initial acquisition of virtue by the child, when the feelings of pleasure and affection, pain and hatred, that well up in his soul are channeled in the right courses before he

can understand the reason why" (Cooper, 1997, p. 1344). Divine illumination, for Plato, was essential to epistemological inquiry via the subject-object dichotomy, the fact-value and cognitive / non-cognitive distinction and the relationship between the individual and the community.

To establish a priori inquiry as a participation in divine illumination, Plato distinguished the universal properties of the immortal forms as unchanging, as opposed to the physical world which he characterized as a world of particular properties, subject to change. Plato's employment of what has been referred to as the "Doctrine of Divine Immutability" (DDI) (Leftow, 2014) brings more clarity to this difference within his general distinction between knowledge and true belief. For Plato, true belief is fleeting and, thus, untrustworthy without a rational account to tie it down, and change is a characteristic of true belief, so Plato equates it with imperfection; absence of change is equated with perfection:

> But the best things are least liable to alteration or change, aren't they…And the most courageous and most rational soul is least disturbed or altered by any outside affection?... Surely a god and what belongs to him are in every way in the best condition (Cooper, 1997, p. 1019) … Is it impossible, then, for gods to want to alter themselves? Since they are the most beautiful and best possible (1997, p. 1020).

Change, in contrast, belonged to a lesser reality because it belonged to nature (the physical world), and was therefore mortal and irreconcilable with pure reason; its lesser reality was not a conceivable non-reality, however, since the human discernment of the physical world of change brought the necessary understanding of its participation in the immutable reality. Plato's faith in divine immutability, therefore, was not necessarily a faith in the negation of the

reality of physical bodies, but more of how their reality contrasted with the divine. Nonetheless, Plato's faith in the divine by immutable properties of knowledge lay in his conception of change (flux) as mortal fallibility against the immortal soundness of logic: specifically, his version of the law of non-contradiction which posits that two statements cannot contradict one another. His characterization of the logical impossibility of universal flux as a foundational component of reality runs thusly: "Heraclitus says somewhere that 'everything gives way and nothing stands fast,' and, likening the things that are to the flowing of a river, he says that "you cannot step into the same river twice" (Cooper, 1997, p. 120). Heraclitus' mistake, in Plato's view, is to yield the available discernment of the immortal soul through rational pursuit to perception which leads to the inherently mistaken impression (as an impression) of universal flux.

The Four Factors Via Plato's Prism of A Priori Inquiry Through Divine Illumination

The relationship between the subject inquirer and the object of her / his inquiry can be discerned thusly: since inquiry is to be conducted a priori, the object of inquiry evolves from particulars to universals, hence, change to immutability. Plato uses an example of the subject inquirer observing (upon impression) that two sticks both have particular, physical characteristics and that they may be equal or unequal in length and / or width. Upon this perception, one might conclude that their particular differences define the reality of their being; but it is through a priori reasoning afforded by faith in the divine immortal soul, not perception, which the pursuer of knowledge comes to understand the unchanging form of equality, which, thus, renders the physical world merely as a means of recognizing the immaterial. This faith affords the inquirer the true nature of the shared, common properties of objects that seemingly have none that are discernable.

Leading empiricists such as Elizabeth Anderson believe, like Plato, in the final power of humankind's rational faculty to mediate (thus, decipher) between values / background assumptions that hinder and help epistemological inquiry. For instance, the rational faculty has the discerning ability to employ descriptive values as opposed to normative values in order to ensure a sound scientific approach. Though this fact-value distinction necessarily relies on the distinctly empiricist belief in the concept of "background assumptions" or inevitable values from the inquirer's (or community's) respective social location which guide the determination of aims of inquiry, the empiricist converges with the rationalist tradition in the belief in the power of the faculty of reason to possess the finalizing ability to accord the role of background assumption their proper place in inquiry. The power of reason in this distinction is significantly indebted to Plato's belief in the justifying power of reason through faith in divine illumination to accord its own place in inquiry and at the same time to limit the influence of other faculties such as the senses. This is not to suggest that Plato's religious influence on this distinction draws a parallel between what are today considered to be background assumptions with a separate faculty (such as the senses); it is to suggest, however, that even though the fact-value distinction generally accepts the inevitable influence of values, the power of reason to limit them and assign them their proper role in inquiry is indebted to Plato's belief in the rational faculty as a distinct and, thus, capable overseer of all other mental faculties within the human mind. In contrast to Plato's religious appeal to the divine realm of the immortal soul, leading empiricists such as Anderson or Helen Longino, fully concur with the belief in the final supremacy of one singular faculty, that of reason, to guide and ultimately define epistemological inquiry. Moreover, the fact-value distinction allots a role for background assumptions in inquiry, thus creating, at the same time, a dependence on facts, discovered through inquiry, on values that select the aims of inquiry.

Could such a dependence not be indebted to Plato's view that facts discovered through inquiry are dependent on recollection? Indeed, it would be absurd to equate background assumptions with recollection (since the first appeals to experience and the second to innate ideas), but certainly both factors contain the element of power to what the inquirer must trace back to in order to achieve a more satisfactory epistemology.

The depth of Plato's influence on Western epistemological inquiry can also be traced to what he deemed would be acceptable cognitive criteria and what would be deemed extraneous, non-cognitive factors in inquiry. This distinction can be found in how Plato distinguishes between knowledge and true belief. True belief is non-cognitive if it does not appeal to the explanatory scope of pure reason for justification (for example, if the appeal is to sense perception or emotions as opposed to conceptual accuracy). True belief graduates to knowledge if a claim is accounted for by a purely rational explanation, hence, innate understanding, drawn from recollection; from *Meno*: "For true opinions…are not worth much until one ties them down by (giving) an account of the reason why. And that, Meno, my friend, is recollection" (Cooper, 1997, p. 895). Thus, epistemic inquiry through divine illumination is, for Plato, the recollection of innate ideas through our uniquely human rational power bequeathed to us by the immortal soul. A priori reasoning enables human beings to distinguish knowledge from true belief by our discerning the universal properties of immortal forms from the relative properties of the physical world. Plato cites the example that a human being can understand the form of 'equal' as distinct from observing two sticks that are equal in length:

– Do not equal stones and sticks sometimes, while remaining the same, appear to one to be equal and to another to be unequal?

– Certainly they do.

– But what of the equals themselves? Have they ever appeared unequal to you, or Equality to be Inequality?

– Never, Socrates.

– These equal things and the Equal itself are therefore not the same?

– I do not think they are the same at all, Socrates.

– But it is definitely from the equal things, though they are different from that Equal, that you have derived and grasped the knowledge of equality?

– Very true, Socrates (Cooper, 1997, p. 65).

How did Plato incorporate this view into the role of the individual inquirer in relation to the aims of the broader community? The emphasis on the measure and validation of epistemological inquiry for Plato was deference to the universal truth of rational principles learned through the elicitation of gifted teachers, not through democratic scrutiny or peer review within the community. Moreover, despite Plato's belief that faith in the divine reason of the immortal soul was a belief for human beings to embrace, knowledge was not dependent solely upon simply the willpower of any individual; rather, knowledge, for Plato, was a dispositional enterprise, one which did not come equally to all; only certain people who had the unique will and ability could gain supreme knowledge, as evinced by Plato in the realization of form of the good: "In the knowable realm, the form of the good is the last thing to be seen, and it is reached only with difficulty. Once one has seen it, however, one must conclude that it is the cause of all that is correct and beautiful in anything… the ones who get to this point are unwilling to occupy themselves with human affairs and that their souls are always pressing upwards, eager to spend their time above" (Cooper, 1997, p. 1135). Though all human beings have the ability to learn, only a select few, according to Plato, can reach the realm that transcends everyday human life.

These people, therefore, should be, rulers: those who are "better and more completely educated than the others and are better able to share in both types of life" (1997, p. 1137). As "the best farmers [are] the ones who are best at farming… the rulers must be the best of the guardians…" (1997, p. 1048). In this way, those who obtain the highest knowledge are uniquely gifted individuals who, in the course of their education, have demonstrated special ability that qualifies them to belong to an elite group of rulers. Thus, for Plato, the guardians had the dual role of facilitating knowledge within the citizenry (as in the slave boy example) and, in the process, determining the student's future role in the state. As the citizen's true knowledge is discovered through reason, it is the gifted rulers of the state who are the guardians of reason and directors of knowledge.

The Four Factors Via Divine Illumination and A Priori Reason in Augustine's Neoplatonist Epistemology

Similar to Plato's awakening of knowledge as the appeal of reason through faith in the immortal soul in the child whose "feelings…are channeled in the right courses" (Cooper, 1997, p. 1344), Augustine's Neoplatonism (a development of thought from the second century CE to the sixth century that drew from Plato's beliefs and incorporated major themes, such as the immortality of the soul, into Christian philosophy) draws focus to faith in God, which "enlightens" the human soul and the believer can "partake" in God's unchanging Truth: "when that affection of the soul is ungoverned…errors and false opinions defile the conversation… [The soul] must be enlightened by another light, that it may be partaker of truth, seeing itself is not that nature of truth. For Thou shalt light my candle, O Lord my God… in Thee there is no variableness, neither shadow of change" (Augustine, 1999, p. 54).

As Lydia Schumacher notes, such a partaking is not made clear by Augustine as to the individual's degree of active / passive agency. Schumacher refers to the "extrinsic" and "intrinsic" interpretations which emphasize distinction between the passively and actively illumined potential knower: The potential knower is "not passively illumined so much as illumined to illumine reality" (Schumacher, 2009, p. 15). Strikingly, then, this suggests an ambiguity of the divine power or at least, receptivity, of the human agent. Regardless, God is the cognitive enabler of the will of the mutable soul of human beings to discern true knowledge of the universal, the immutable and necessary properties of all things. For Augustine, then, the feelings induced by reason discovered through the immortal soul do not induce one's passions to follow its path; divine illumination can only be obtained through God. "God is to the soul what the sun is to the eye. God is not only the truth in, by and through whom all humans are made wise. He is also the light in, by and through whom all intelligible things are illumined" (as cited by Fitzgerald, 1999, p. 438).

The Four Factors Through Augustine's Neoplatonist Lens

Augustine's Neoplatonism conceives of the relationship between the subject inquirer and the object of inquiry based on the belief that since humankind has a mutable soul, she / he must trust in God to discern the immutable in all things. This brings about the nature of inquiry for the inquirer and the nature of the relationship to the object of her inquiry. Faith in God makes the task of inquiry one of seeing the unchangeable in all objects of inquiry. In this way, the subject inquirer can not only discern the inherent nature of his / her object of inquiry, but the immutable nature of that object. Like Plato's belief that faith in the immortal soul yielded the power to achieve knowledge via a prior reasoning, Augustine believed that *faith in God* could bring about knowledge via a priori reasoning. A priori reasoning would bring one "…to the reasoning

faculty, to which what is received from the senses of the body is referred to be judged" (Augustine, 1991, p. 91).

At the same time, then, this faith in God, which reveals the immutable in all things and the attending endowment of a priori reasoning in inquiry as an act of faith to gain knowledge provides the foundation for Augustine's contribution to the current conception of the fact-value distinction. The discovery of the eternal in God is the discovery of the foundation that will yield to Augustine the line of inquiry which enables him to establish Truth. What current scholars would refer to as background assumptions that guide aims of inquiry Augustine would deem to be a choice to embrace or reject the eternal, unchanging truth, which is God[2]. Discerning the eternal and unchangeable from one's own changeable mind is the necessary background assumption, as it were. The a priori reasoning faculty, which is endowed to the believer in his /her "pass[ing] from bodies to the soul", establishes knowledge (hence, facts) upon the necessary foundation of the inquirer's choice to see the eternal, which is the Christian God:

The realization of the perfect, unchanging nature of God which, at the same time, illuminated the contrasting, imperfect nature of change is the realization of the "values" (as they might currently be referred to) that lay the foundation for a priori reason to proceed from this foundation: "Already Thou hast told me with a strong voice, O Lord, in my inner ear, that Thou art eternal, Who only hast immortality; since Thou canst not be changed as to figure or motion, nor is Thy will altered by times: seeing no will which varies is immortal" (1999, p. 168). Such a realization has the transformative power over the believer to act on a priori reasoning; from The

[2] This presumes the Augustinian conception of God as singular and unproblematized.

Confessions: “Most highest, most good… most beautiful, yet most strong, stable, yet incomprehensible; unchangeable, yet all-changing” (Augustine, 1999, p. 18).

The religious roots of the cognitive / non-cognitive distinction would be articulated as a by-product of Augustine’s articulation of the fact-value distinction / relationship through the distinction of knowledge from true belief as the distinction between the divine appeal of a priori reason and the merely corporeal appeal of the physical world:

> I had found the unchangeable and true Eternity of Truth above my changeable mind. And thus by degrees I passed from bodies to the soul, which through the bodily senses perceives; and thence to its inward faculty, to which the bodily senses represent things external, whitherto reach the faculties of beasts; and thence again to the reasoning faculty, to which what is received from the senses of the body is referred to be judged (Augustine, 1991, p. 91).

For Augustine, the process of a priori inquiry of the individual via faith in divine illumination complements the unifying purpose of the church and affirms church ecclesiastical authority. Through his concerns regarding the schism between the Catholic Church and the Donatists, a Catholic sect based in North Africa who rejected what they saw as a “tainted” alliance between the Roman Empire and the Church (Walker, 1985), Augustine argued that there must be a unifying authority and presence which transcends the significance of the manner of ministers who carry out the sacraments: “According to the sacrament of the heavenly grace of God which we have received, we believe in the one only baptism which is in the holy Church” (Schaff, 1890, p. 603). For Augustine, it was Jesus Christ who had the true authority and, therefore, was the true minister:

> But the baptism of Christ, consecrated by the words of the gospel, is necessarily holy, however polluted and unclean its ministers may be; because its inherent sanctity cannot be polluted, and the divine excellence abides in its sacrament, whether to the salvation of those who use it aright, or to the destruction of those who use it wrong (1890, p. 532)

Further, Augustine saw the efforts of the Donatists to distinguish the purity of ministers from the impurity of others as illegitimate because they served to decentralize the universal purpose of the one true church, "…representing the body of Christ, which is the Church of the living God, the pillar and mainstay of the truth, dispersed throughout the world, on account of the gospel which was preached, according to the words of the apostle, "to every creature which is under heaven as representing the whole world" (Schaff, 1890, p. 750). In this way, the centralized authority of the church was paramount for Augustine for the individual to be a true Christian. For Augustine, if divine illumination brings about the individual's trust and belief in God, it is the role of believers to trust in the authority of the church to guide them: "I should not believe the gospel except as moved by the authority of the Catholic Church" (1890, p. 142). Moreover, Augustine makes an overt appeal to authority to establish a boundary line between what is acceptable for the individual inquirer to question and what is not. The authority of the Old and New Testaments includes, by extension, the authority of the church. In other words, institutional authority is to be considered synonymously with scriptural authority:

> In order to leave room for such profitable discussions of difficult questions, there is a distinct boundary line separating all productions subsequent to apostolic times from the authoritative canonical books of the Old and New Testaments. The authority of these books has come down to us from the apostles through the successions of bishops and the extension of the Church, and, from a position of lofty supremacy, claims the

> submission of every faithful and pious mind. If we are perplexed by an apparent contradiction in Scripture, it is not allowable to say, The author of this book is mistaken; but either the manuscript is faulty, or the translation is wrong, or you have not understood (1890, p. 206).

Clearly then, scripture and the ecclesiastical authority of interpreting it were inextricably linked with how justification through divine illumination was attained in the individual. The authority of scripture as a necessary inducement of deference for the individual to begin the journey of knowledge, was brought to him / her by the mandate of the bishops and the church institution.

Inquiry Via Reason as Human Knowledge of God: Descartes

As a major figure in the advancement of rationalism in the 17th century and beyond, Descartes contributed to the role of the transcendent in the value-free ideal debate within social scientific educational scholarship by arguing how the autonomous human will to reason amounted to knowledge of God, thereby reducing appeal to the transcendent as a realm beyond the rational faculty of the human mind to drawing on the transcendent as a realm wholly within this rational faculty. Through this departure, distinguishing objective knowledge from true belief could be achieved by posing and addressing the problem of how adequate cognitive criteria and inadequate cognitive criteria are to be arrived at. The level of reasonable conviction of the individual would establish the principle of how to discern knowledge from true belief: “I distinguish the two as follows: there is conviction when there remains some reason which might lead us to doubt, but knowledge is conviction based on a reason so strong that it can never be shaken by any stronger reason” (Descartes, 1991 p. 65). The inquiring subject would employ this principle using the faculty of reason in the mind to test the veracity of potential objects of knowledge (such as accepted opinions) and arrive at a comprehensive foundation upon which

knowledge can be built. In the first stage, the rational faculty of the individual mind assesses the reliability of sense perception and its attending images through the lens of reason and determines that sense perception is unreliable. For example, the possibility of one's being deceived by an evil demon makes it reasonably doubtful that she / he can trust her / his senses or even one's own current mathematical understandings. Therefore, false belief is irrational belief that arises from opinions drawn primarily from sense perception (1991, p. 8).

As a component of conceptualizing the transcendent as a realm within the exclusive domain of humankind's rational faculty, it would make sense for Descartes to argue that the individual human mind can establish a foundation for knowledge to be obtained, thereby enabling the opportunity to propose cognitive criteria which can distinguish objective knowledge from true belief. After showing what amounts to merely true belief, Descartes arrives at what cannot be reasonably doubted: his own existence; for, to doubt one's own existence is to be an agent who thinks. Hence, thinking proves existence: "But what then am I? A thing that thinks. What is that? A thing that doubts, understands, affirms, denies, wills, refuses, and that also imagines and senses" (Descartes, 1996, p. 10). This conclusion enables a foundation for the attainment of objective knowledge; for, since this certainty of one's own existence as a thinking entity is arrived at through the domain of the mind via reason, the thinking subject is defined by this dynamic and, therefore, his / her perceptions can be more easily fooled by an evil demon regarding knowledge of entities of divisible extension (physical objects) than the clear and distinct perception of those of non -divisible extension (the mind) (1996, p. 12). In this way, the rational mind of the inquirer becomes the point of reference as the foundation for knowledge. It is worth noting here how Descartes refers to his exaltation of finally reaching the solid foundation of his own mind as an end to doubt and the beginning of knowledge; in contrast to

Augustine's newfound faith to follow the "lamp of God" to true knowledge, for Descartes knowledge was illuminated by the will from within his own individual mind and the particular level of clarity with which this will within his own mind brought to embrace this faculty of reason: it was the "great clearness of my mind …It would have indicated *un*freedom only if it had come from the compulsion of something external, rather than coming from within myself" (Descartes, 1991, p. 21). The legitimizing authority or influence of an external power is replaced by the clarity found within the individual.

If the mind through reason made possible Descartes' distinction between knowledge and true belief as well as creating a foundation for knowledge, what role would God play in his conception of the transcendent? According to Descartes, the human being to discern reality through reason was to know God and to carry out this knowledge as his intermediary. Though the faculty of reason within the mind constructs and applies the rules for doubt, existence and knowledge, the author of this dimension is God. Descartes' depiction of the individual's knowledge of God is illustrated in his reading of Plato's slave boy example from Meno: "Socrates asks a slave boy about the elements of geometry and thereby makes the boy able to dig out certain truths from his own mind which he had not previously recognized were there, thus attempting to establish the doctrine of reminiscence. Our knowledge of God is of this sort" (Descartes as cited in Abbruzzese, 2008, p. 429). The process of recollection, then, becomes a conceptually autonomous choice of the mind for Descartes, not a process of *arriving* at the faculty of reason via leaving from the body or sense perception / images attributed to sense perception. Coming from this perspective, Descartes also parts ways from Plato and Augustine by discarding the belief that identification of shared features of physical objects assists (such as Plato's comparison of the lengths of two sticks) in arriving at pure reason, for this would assume

that the initial identification of the tangible reality of physical properties have a role in discovering the faculty of reason. Hence, for Descartes, the contraries of being and becoming in the process of recollection, as generally shared between Augustine and Plato, are subordinated by an act of pure reason within the mind, authored by God.

Proving God's existence, for Descartes, served to enable the thinking subject how she / he could discern the reality of physical properties and, thus, have an objective understanding of the mind and the body distinction. However, in a broader historical context of the appeal to the transcendent as the means to attain knowledge, the rational proof of God inaugurates the human mind itself as the operating source of reference for appeal to the transcendent. Put another way, appeal to the transcendent which, for Descartes, was a rational universe of abstract properties, was an appeal, not to any substance of a binary or external nature for humankind within a greater reality, but an appeal exclusively to the rational human mind itself as the inquiring witness and agent of knowledge. As I will show, Descartes' proof of God serves in a historical context as a demonstration of the rational scope and agency of the human mind in its degree of omniscience, omnipresence and omnipotence; it has little to do with employing proof as a renewed call for faith in a greater spirit or being that wrought rationality as a primary way to understand it. Further, this belief in the finality of the human mind as the foundation of rational knowledge is the forerunning point of convergence between the necessary and the contingent that leading philosophers of science like Sandra Harding and Helen Anderson must contend with: the extent of the agency of the appeal to reason as a sufficiently autonomous mechanism in scientific inquiry.

To prove God's existence, Descartes reasons that if I have an idea of God, a perfect being, then this idea (or the reality it represents) of a perfect being must be the effect of a cause,

which must contain as much reality as the effect. Hence, God is the cause of the perfection in my idea of him. Further, because this idea of God represents his perfection, I am not the cause of this idea. Thus, being the only ascertainable cause of this perfection in my idea of God, God must exist (Descartes, 1996, p. 12-16). The suggested limitless capacity of one's rational human mind, through this proof, to be able to stand eye to eye with God and recognize God's existence is, at the very least, a belief in the human rational ability to discern God's essential properties. Second, now that I can prove God's existence through my rational agency as a human being, I can prove the existence of anything that may be of less substance, such as matter. I do this first by submitting that it is not, by reason, in God's perfect nature to be a deceiver. I was created by God and he bestowed me with reason; my reason informs me that my ideas originate from corporeal entities. Therefore, corporeal entities exist (1996, p. 28). However, since the idea of corporeal entities comes to me less distinctly and clearly (due to, for example, the possibility of an evil genius fooling me) than my mind does, I know the latter more easily than the former (1996, p. 9).

Descartes attempts to present his dualist position that the mind and body are different and, therefore, separate in substance by using the same criteria of certainty. For, if the mind is of a difference of substance, it can have a different, thus, higher quality and retain supreme arbitrator of what can amount to knowledge. Essentially, the argument runs that if the human being can only be certain that his / her mind exists, and if the mind is un-extended and the body is extended (as containing physical properties), the mind and the body are of different substances and are, therefore, separate. As a result, the body is less knowable, thus, more elusive than the mind (Descartes, 1996, pp. 31-32). Based on this conclusion, Descartes asserts his understanding of objectivity through his conception of the transcendent: subjective, yet God-enabled,

knowledge of Truths discernable from clear and distinct ideas arrived at through pure reason. Such truths are dependent on the subject accessing them, but independent in the sense that they are discovered through reason, a universal measure. Hence, objective knowledge is knowledge of God since it is acting from reason; this knowledge both discovers Truth and discards deceptive opinions posed by the deceptive nature of sense perception (Descartes as cited in Abbruzzese, 2008, p. 429): “For all these sensations of hunger, thirst, pain, etc. are in truth none other than certain confused modes of thought which are produced by the union and apparent intermingling of mind and body” (Descartes, 1996, p. 29).

Further, in the contempt of physical bodies by the inwardly reasoning mind, Descartes asserts the supremacy of the agency, capacity and domain of the rational faculty. He articulates this in his understanding of physical bodies merely as matter: a separate, Godless, spectrum of machinations: “I suppose the body to be just a statue or a machine made of earth, which God forms with the explicit intention of making it as much as possible like us…” (Descartes, 2004, p. 99). Like Plato and Augustine before him, Descartes viewed knowledge as something that did not distinguish the descriptive and the normative; the way things are and the way they ought to be share the same immutable truth. Through reasoning of the mind, it is possible for only reasoning to reside, to subordinate passion. In his correspondence to Elizabeth, Princess of Bohemia, he wrote:

> The true function of reason, then, in the conduct of life is to examine and consider without passion the value of all perfections of body and soul that can be acquired by our conduct, so that since we are commonly obliged to deprive ourselves of some goods in order to acquire others, we shall always choose the better ... It is enough to subject one’s

> passions to reason; and once they are thus tamed they are sometimes useful precisely to the degree that they tend to excess (As cited in Taylor, 1989, p. 151).

With regards to the fourth factor of how the individual inquirer was to gain knowledge in relation to her / his broader community, epistemology was a metaphysical concern of pure, immutable reason; epistemological accountability was manifest through reference to this one region of the mind, for, again, this was knowledge of God. Thus, it should be noted here that the epistemological accountability of the individual inquirer was to her / his God-afforded enacting of reason, not to a scientific community. The accountability one has to her / his community is, thus, not a metaphysical concern but a practical matter which is understood by discerning the individual's place within it, the state and the broader universe:

> After acknowledging the goodness of God, the immortality of our souls and the immensity of the universe, there is yet another truth…Though each of us is a person distinct from others…we ought still to think that none of us could subsist alone and that each one of us is really one of the many parts of the universe, and more particularly a part of the earth, the state, the society and the family to which we belong by our domicile, our oath of allegiance and our birth. And the interests of the whole, of which each of us is a part, must always be preferred to those of our own particular person (Descartes, 1991, p. 266).

Though it can only be helpful, even essential, to include assessment of Descartes' proof of God's existence within the broader rendering of the respective theological / religious approach, focussing exclusively on the former to serve the purpose of the latter would be inadequate. Susan Bordo takes this stance by offering a general critique. She argues that God, for

Descartes, functions as a means of stability in the face of discontinuity and incoherence. This adversity of a "disastrously fragmented and discontinuous mental life" (Bordo, 1987, p. 84) is the sum of experience in general and, therefore, must be rooted out. This is why, for Bordo, our relationship with God is a causal one which, in turn, ensures continuity and coherence to our inner life as well. The absence of God, then, would imperil the subjective world, subjecting it to the temporal, hence, the corporeal: "two and two may equal four right now, while we are attending to it, but we need God to assure us that two and two will always form four, whether we are attending to it or not" (1987, p. 84). Bordo's rendering of the close proximity of God in Descartes' appeal to the transcendent as a realm within the rational faculty of human reason, reminds one of the 18th century poet William Blake, via one of his central characters, Urizen: the reasoning deity amongst the three others (Luvah as love, Tharmas as sensation, and Urthona as creativity) who, through his fall, wars to subordinate all other deities under his own authority, resulting in his inhabiting a world of his own abstraction: "LO, a Shadow of horror is risen In Eternity! unknown, unprolific, Self-clos'd, all-repelling" (Erdman, 1988, p. 70). His aim, to sustain this shadowy world, is similar to Bordo's rendering of Descartes' approach. In Blake's *Book of Urizen*, Urizen proclaims: "I have sought for a joy without pain, For a solid without fluctuation" (1988, p. 71). Bordo argues that this religious belief in pure immutable rationality is a faith to ensure a universe of unchanging continuity against changing discontinuity reflects more broadly "the fragility of human cognitive relations with the object world" (Bordo, 1987, p. 84).

At the same time, Bordo's approach to assessing Descartes' views by taking into account these views as a religious perspective is an argument of caution against the mistake of creating a false distinction / creation of categories between what is presented as an inherently religious

position on the transcendent and what is, in reality, a merely inwardly subjective stance that removes God from having any significant role to play in human knowledge. In other words, Bordo allows the belief as a religious one to explain itself through its own lens. This allows for the argument for the human being to station reason as a deity within the realm of the transcendent (for Descartes, if one thinks rationally, one knows God). It is not uncommon for this distinction to be missed in understanding the role of God in Descartes' system. Charles Taylor, for instance, fails to recognize this distinction by charging that Descartes' views on the role of rationality necessarily negates a re-orientation of appeal to the transcendent and, instead, only offers a subjective philosophy: Descartes "gives Augustinian inwardness a radical twist and takes it in a new direction…that Descartes situates the moral sources within us" (Taylor, 1997, p. 143). To distinguish Descartes from Plato, Taylor wrongly construes Descartes' position as simply establishing rationality as the single primary feature of his system, as a move away from Plato's placing rationality as a part of one's being within the greater cosmos: "rationality is now an internal property of subjective thinking, rather than consisting in its vision of reality" (1997, p. 156). The mistake Taylor makes here is not his attempt to contextualize Descartes' belief in rationality, but his failure to establish within this contextualization a set of criteria to determine whether Descartes does, indeed, come from a religious / theological position or not. A focus on the subjective rationality of Descartes' position within the context of Plato's vision of reality is insufficient to render Descartes' particular approach to the transcendent. Looking to the transcendent includes turning to an abstract set of rules / principles or towards a source of inspiration that surpasses immediate human experience; simply because rationality is the primary epistemological tool does not necessarily mean that it can be reduced to a mistaken subjectivity because even if Taylor does not wish to focus on the religious quality of the role of rationality in

Descartes' system, he must include it to assess Descartes' view of the role of reason in human knowledge. Taylor does not address Descartes' belief that knowledge of God is an induction of reason into the transcendent, thereby making a region within the mind of human beings divinely ordained. Such a divine ordination allows the individual to act with knowledge of God to determine the nature of all things and augment the participation in the immortal soul towards a more autonomous and curious harmony with God in His design.

Knowledge via Divine Reason to Discern Contingency: Aristotle

As with Plato, the role of the transcendent in achieving objective knowledge was indispensable to Aristotle and it was this role that served as a religious foundation for Western thought. For Aristotle, knowledge depended on humankind's understanding nature (all existing things) through discerning essential laws of motion (change in growth, temperature) that can be drawn from it: "Knowledge is the object of our inquiry, and men do not think they know a thing till they have grasped the 'why' of (which is to grasp its primary cause)" (Hardie, Book II, Part 3). And to understand motion (nature) in its essence, one needed to discern this causation through observation, via sensory perception. To attain knowledge, Aristotle established four causes that account for motion: the material cause (the material out of which a object is created), the formal cause (which accounts for the form / shape of an object), the efficient cause (the primary antecedent of rest or change in the object), and the final cause (the goal, for which an activity serves to achieve). While each cause has a role to play in the realization of a thing's existence, the final cause is of a teleological nature ('telos' meaning "end" and 'logical' a derivative of the word 'logos' which, in this case, denotes 'word' or 'divine reason') (Walker, 1985):

> Again a mode of cause is the goal. This is that for the sake of which - as health is for walking. We answer the question 'Why does he walk?' by saying 'to be healthy', thinking that in saying this we have stated the cause. The same is true also of what happens or is present as an intermediary as a result of someone else's action on the way to the goal: slimming, purging, drugs or surgical instruments. All these are for the sake of the goal, even though they differ as some are activities, others instruments (Hardie, 2009, Bk II, Part 3)

The goal of the thing that comes into existence is determined by that which "is better thus (not without qualification, but with reference to the essential nature in each case)" (Hardie, 2009, Book II, Part 7). The goal is that which is good for the respective agent to bring about; the goodness is determined by the given nature of the particular agent. The likelihood of the goal being realized is whether it is better for the agent to bring about this change: "If then it is both by nature and for an end that the swallow makes its nest and the spider its web, and plants grow leaves for the sake of the fruit and send their roots down (not up) for the sake of nourishment, it is plain that this kind of cause is operative in things which come to be and are by nature" (2009, Book II, Part 8).

The ability of human beings to understand the teleological character of the final cause (in addition to the other three causes) is availed through our ability as inquiring subjects to understand the inherent nature of the objects of our understanding. A premise that Aristotle asserts, which enables the subject knower to know the inherent nature of objects themselves (the thing in itself), is that all physical objects have discernable matter (what the object is made of) and form (how an object is assembled so that its function can be performed). The human being as an individual knower can come to know a physical object by discerning its actuality (its form)

from its potentiality (the potential of the particular matter to emerge in a more complete state). Furthermore, human beings themselves, since they are also part of nature, have potentiality as knowers because they have the ability to perceive forms as forms; one becomes a knower once the cognitive ability of the potential knower is actualized through the exercise of this ability:

> Since in every class of things, as in nature as a whole, we find two factors involved, (1) a matter which is potentially all the particulars included in the class, (2) a cause which is productive in the sense that it makes them all (the latter standing to the former, as e.g. an art to its material), these distinct elements must likewise be found within the soul (Hardie, 2009, Book III, Part 5).

The individual capacity of the human being to attain knowledge of nature is possible through her / his distinctively rational feature: “but we are seeking what is peculiar to man. Let us exclude therefore, the life of nutrition and growth. Next, there would be a life of perception, but it also seems to be common even to the horse, the ox and every animal. There remains, then, an active life of the element that has a rational principle…” (Ross, 1999, p. 11). With this rational ability, the human being can employ divine reason:

> If reason is divine, then, in comparison with man, the life according to it is divine in comparison with human life. But we must not follow those who advise us, being men, to think of human things, and, being mortal, of mortal things, but must, so far as we can, make ourselves immortal, and strain every nerve to live in accordance with the best thing in us…that which is proper to each thing is by nature best and most pleasant for each thing; for man, therefore, the life according to reason is best and pleasantest, since reason more than anything else is man (1999, pp. 174-5).

Aristotle's teleological position yielded much subsequent debate for Neoplatonists and theologians of the Middle Ages (Walker, 1985) as to how his belief in divine reason related to his belief in the possibility of a transcendent source behind the contingent 'design' of the universe. In other words, whether Aristotle's belief in the teleological nature of the causal relationship between potentiality and actuality could yield understanding of not only the nature of existence of the physical world, but yield a sense of transcendent purpose as to why it came to be the way it did played a major role in how Aristotle became such a major influence in the religious roots of the sciences. Aristotle believed that events of nature could not logically consist of a first cause because, as a cause, something would have had to exist to set it in motion and another before it, etc; there also could not have been an infinite regress of causes because this would run contrary to the reality of change (which requires a first stage, second stage, etc) (Hardie, 2009, Book VIII, Part 1). Thus, Aristotle postulated that, since human knowledge is to denote knowledge of nature and to know nature (motion) is to understand causation through divine reason, nature's chain of events can be attributed to an 'unmoved mover', as the source of all motion (change): an unseen, immaterial perfection that is unmoved, but in its perfection, gives itself movement through self-contemplation: "So it is clear that in all these cases the thing does not move itself, but it contains within itself the source of motion—not of moving something or of causing motion, but of suffering it" (Hardie, 2009, Book VIII, Part 4). Nature's enthrallment with this self-initiated motion elicits motion in less perfect things due to the latter's passive enthrallment with an immaterial prime mover (2009). This postulation of how human knowledge (thus, knowledge of nature) is to consist of discerning causation through reason does not include arguments to illustrate the nature of the relationship between the divine reason in

humankind and the belief in this immaterial, transcendent source of nature. “Appeal to the transcendent” is, hence, a fair rendering of how Aristotle arrives at this postulation.

In regards to how the epistemological authority of the individual relates to the authority of the broader community, Aristotle, as Plato believed, did not argue specifically for a corresponding scientific community to assess the plausibility of the subject inquirer’s methods of inquiry or standards for findings. Instead, as outlined, he prescribes divine reason as the primary guide of inquiry. Aristotle, does, however, argue that the subject inquirer, like any human being is ultimately accountable to the state (as Plato believed) and the social nature of human beings precludes their respective lack of need of one another’s help. This social need, to live together, is reflected both by the individual and the state: “And therefore, men, even when they do not require one another’s help, desire to live together; not but that they are also brought together by their common interests in proportion as they severally attain to any measure of well-being. This is certainly the chief end, both of individuals and of states” (Aristotle, p. 2866). Therefore, the social function of human beings is determined ultimately by the state and, thus, at the same time, the state determines the value and use of the individual; this, we can infer, would include the value and use of the epistemological inquirer and her / his methods and findings. In ascribing this social function to human beings within the state, Aristotle believed in some form of aristocracy, which did not distinguish constitution and government: “The words constitution and government have the same meaning, and the government, which is the supreme authority in states, must be in the hands of one, or of a few, or of the many” (Aristotle, p. 2868).

For Aristotle, if the state rules according to “the common interest”, as manifested by the desire of human beings to live together (as mentioned above), the former will function according to “strict principles of justice”, principles that are arrived at as a means of rational inquiry by

ascertaining what justice pertains to and how to determine justice as a mean between extremes: "With regards to justice and injustice we must (1) consider what kind of actions they are concerned with, (2) what sort of mean justice is, and (3) between what extremes the just act is intermediate" (p. 2632). Thus, as the individual epistemological inquirer is to be guided by his / her divine reason, so the state is to make the final determination as to whether or how his / her inquiry will contribute to the just principles of the state.

Knowledge Via Faith and Divinely Endowed Reason to Discern God and His Effects: Aquinas

Thomas Aquinas agreed with much of the substance of Aristotle's approach to achieving objective knowledge, one area of which was regarding Aristotle's argument that an unmoved mover was a condition of existence, but referred to now by Aquinas as 'God'. As Karen Armstrong notes, for Aristotle, "…God had simply been a continuation of physical reality rather than a reality of a totally different order" (Armstrong, 1993, p. 206). Aquinas, however, sought to distinguish God as not only the Necessary Being of all existence, but to make epistemology itself a Christian theological concern.

> In God there exists the most perfect knowledge. To prove this, we must note that intelligent beings are distinguished from non-intelligent beings in that the latter possess only their own form; whereas the intelligent being is naturally adapted to have also the form of some other thing; for the idea of the thing known is in the knower" (Aquinas, 2006, p. 361).

In other words, if the individual is to have knowledge of Truth, she / he would have knowledge of God (Truth). Therefore, all knowledge comes from God, the unmoved mover of all things. Further, if we are to attain knowledge, we must ascertain the existence of God; and to ascertain the existence of God, the ultimate cause, thus, reason for all things, the assumption is needed that

human beings are intelligent beings, in contrast to natural bodies, which are non-intelligent. Incorporating Aristotle's position, Aquinas believed that intelligent beings have the ability of inquiry to determine the nature of the object of inquiry, for the idea of the form of the object is in the human knower: "Non-intelligent beings possess their own form; whereas the intelligent being is naturally adapted to have also the form of some other thing; for the idea of the thing known is in the knower" (2006, p. 361).

With this unique cognitive ability to discern the inherent nature of the object, human beings, intelligent beings, are to have knowledge by learning about the "effects" of God, God's creation of the existence and essence of all things (Aquinas, 2006, p. 320). Aquinas sets out to show here that immaterial things can have potentiality, which is in contrast to Aristotle's view that only material things can have this aspect. Aquinas contends that a thing's essence pertains to the essential properties it contains, whereas a thing's existence pertains to what kind of thing it is in reality. Therefore, one can determine the essence of something (the essential features of a unicorn, for example) without recourse to whether it actually exists. In other words, the existence of a thing is extraneous to its essence. In the same way, the existence of a thing is not answered by its essence. Further, for Aquinas, contained in the existence of all *beings* is their *act of existing*. For example, "to be Jerry" is to have an actualizing dimension of existing. In this way, existence has the actualizing power, just as form has over matter (2006, p. 205).

However, actualizing power is a causal, but not a determinative power that brings about something from nothing. Hence, existence, as an act of existence, is not brought about by things themselves, material or immaterial. If the act of existence of something could create its "being" (*esse*), this would eventually refer to an illogical first cause as its ultimate source: "And since everything that is through another is reduced to that which is through itself as to a first cause,

there is something that is the cause of existing in all things in that this thing is existence only" (Miller, 1997, Ch iv, para 6). Aquinas argues that the *essence* of something (such as the essential characteristics of the legs and the covering surface of a table) is immutable, thus, necessary, whereas the *existence* of something (as we understand existence), is mutable (such as the size, shape or color of a table), due to its actualized physicality; thus, it is contingent. So, if the existence of something is contingent, it cannot bring itself into existence; something necessary which contains its own existence must qualify. Aquinas submits that it is God who is that necessity which contains its own existence; hence, God has no potentiality and is pure act in his being. Therefore, he is the unmoved mover of contingent existence. In this way, empirical inquiry is a stage, which enables "intelligent beings", humans, to understand the "effects" of God:

> When an effect is better known to us than its cause, from the effect we proceed to the knowledge of the cause. And from every effect the existence of its proper cause can be demonstrated…; because since every effect depends upon its cause, if the effect exists, the cause must pre-exist. Hence the existence of God, in so far as it is not self-evident to us, can be demonstrated from those of His effects which are known to us (Aquinas, 2006, p. 178)

This idea of the existence of God as 'cause' and, thus, correlating the attainment of knowledge by discerning God's "effects" through empirical inquiry, is a distinctly different approach from Augustine's belief in the 'mutable soul to look inward or of Descartes' belief in the faculty of pure reason in the mind. Aquinas, as Alexander Fidora points out, does not view divine illumination as necessary in the human intellect to attain some truths, for she / he has "a natural light" which affords the human intellect to appeal to experience (Stump, 2012, p. 3). To discover

an effect, for Aquinas, is to ascertain not only proof of cause, but to enable a replacement of the definition of the cause by the effect: “When the existence of a cause is demonstrated from an effect, this effect takes the place of the definition of the cause in proof of the cause's existence” (Aquinas, 2006, p. 179). For, “the question of its essence follows on the question of its existence” (2006, p. 179). This framing of human knowledge of God through empirical discernment of his “effects”, allows, for Aquinas, an ascertainment of God’s existence not only as an unmoved mover of contingent effects, but also as an unmoved mover with the additional essence of designer:

> Now whatever lacks knowledge cannot move towards an end, unless it be directed by some being endowed with knowledge and intelligence; as the arrow is directed by the archer. Therefore, some intelligent being exists by whom all natural things are directed to their end; and this being we call God (2006, p. 182).

This differs also from Aristotle’s view that empirical enquiry can only discern that physical objects of nature have aims within them; for Aristotle, making a conclusion that there is an external designer of nature is not empirically provable: "It is absurd to suppose that purpose is not present [in nature] because we do not see an agent deliberating…The best illustration is a doctor doctoring himself: nature is like that” (Aristotle, 2009, Physics II, Part 8).

This concept of knowledge as knowledge of God brings us to Aquinas’ influential views concerning the fact-value distinction. If we allow the religious roots of Aquinas’ contribution within serious epistemological inquiry, we can understand Aquinas’ dual concept of God as unmoved mover and designer and the corresponding relationship between reason and faith as a framing of the fact-value distinction. God as the unmoved mover serves to show the demonstrative power of reason (the faculty that discerns facts), but God as designer also appeals

to the power of one's knowledge through faith (the faculty that asserts the values / background assumptions for inquiry). In other words, it is faith, not reason which *directs* humankind to God:

> I answer that, It was necessary for man's salvation that there should be a knowledge revealed by God besides philosophical science built up by human reason… man is directed to God, as to an end that surpasses the grasp of his reason: "The eye hath not seen, O God, besides Thee, what things Thou hast prepared for them that wait for Thee" (Is. 66:4). But the end must first be known by men who are to direct their thoughts and actions to the end. Hence it was necessary for the salvation of man that certain truths which exceed human reason should be made known to him by divine revelation (Aquinas, 2006, p. 153).

There are two tracks of knowledge, but both contribute to comprehensive knowledge of God: one that is within the domain of natural reason (which establishes facts) and the other within the domain of divine revelation (which establishes the foundation of values / backgrounds assumptions):

> While then the truth of the intelligible things of God is twofold, one to which the inquiry of reason can attain, the other which surpasses the whole range of human reason, both are fittingly proposed by God to man as an object of belief (Joyce, 1923, ch iv).

Divine revelation (discerning faculty of values / background assumptions) and reason (discerning faculty of facts), then, have a complementary relationship which leads to comprehensive Truth. In this way, the fact-value distinction is understood by Aquinas rather as the faith-reason distinction, but with dependence of reason on faith. Reason yields what is provable, whereas faith yields what ought to be believed in, thereby setting the conditions for creating what is provable and how such an act must be carried out. Proof of the existence of God and nature is

within the realm of reason, but knowledge of God as the Holy Trinity, for example, or of Jesus as the incarnation of God the son, is a matter of faith (Aquinas, 2006, p. 638). However, faith, though beyond reason, is not opposed to reason.

> Now the knowledge of naturally known principles is instilled into us by God, since God Himself is the author of our nature. Therefore the divine Wisdom also contains these principles. Consequently whatever is contrary to these principles, is contrary to the divine Wisdom wherefore it cannot be from God. Therefore those things which are received by faith from divine revelation cannot be contrary to our natural knowledge.

And reason, if used properly, is not in opposition to faith. For, since what reason demonstrates is true, these conclusions cannot be false. At the same time, that which is deemed true by faith ("since it is so evidently confirmed by God") cannot be said to be false, because "the false alone is opposed to the true" (Joyce, 1924, ch iv).

Since reason in humankind demonstrates the effects of God, it serves to show, through empirical observation, our likeness to God, but, at the same time, the limits of human reason, which are "adapted", thus, subordinate, to "the truth of faith":

> …sensible things from which human reason derives the source of its knowledge retain a certain trace of likeness to God, but so imperfect that it proves altogether inadequate to manifest the substance itself of God. For effects resemble their causes according to their own mode, since like action proceeds from like agent and yet the effect does not always reach to a perfect likeness to the agent. Accordingly human reason is adapted to the knowledge of the truth of faith, which can be known in the highest degree only by those who see the divine substance… (Aquinas, 1924, Ch VIII)

So, for Aquinas, human reason can discern the effects of God (facts), but only through the prism of the greater knowledge, which is found through faith (values, background assumptions): “The existence of God and other like truths about God, which can be known by natural reason, are not articles of faith, but are preambles to the articles; for faith presupposes natural knowledge, even as grace presupposes nature, and perfection supposes something that can be perfected” (Aquinas, 2006, p. 179). Human reason, then, according to Aquinas, is subordinate to Christian doctrine (adherence to the Trinity and the Incarnation) and serves to enhance understanding of God:

> But sacred doctrine makes use even of human reason, not, indeed, to prove faith (for thereby the merit of faith would come to an end), but to make clear other things that are put forward in this doctrine. Since therefore grace does not destroy nature but perfects it, natural reason should minister to faith as the natural bent of the will ministers to charity. Hence the Apostle says: "Bringing into captivity every understanding unto the obedience of Christ" (2 Corinthians 10:5) (2006, p. 167).

Regarding Aquinas’ view on the relationship between the individual inquirer and the community in epistemological inquiry, since the inquiring subject is, at the same time, the subject of the state, she / he is to adhere to Christian doctrine as administered by the ecclesiastical authority of the church. The ecclesiastical authority exists as divinely ordained by Jesus Christ “He chose ministers and would dispense His gifts to His faithful people through their hands” (Rickaby, 1905, para 3). The existence of institutional authority is a matter of necessity, for if there is not, “unity” of agreement cannot subsist and diversity will ensue:

> There must be some power of higher ministry in the Church to administer the Sacrament of Order; and this is the episcopal power (1905, para. 1)…One requisite of the unity of the Church is the agreement of all the faithful in faith. When questions of faith arise, the

> Church would be rent by diversity of judgements, were it not preserved in unity by the judgement of one (1905, para. 2)

It can be inferred, then, that the inquiring subject's findings of God's contingent creation are to be congruent, thus, in harmony, with the authority of the church. This harmony, however, is not to preclude individual agency, since beings uniquely have rationality at their disposal to a trace God's effects

> When it is said that God left man to himself, this does not mean that man is exempt from divine providence; but merely that he has not a prefixed operating force determined to only the one effect; as in the case of natural things, which are only acted upon as though directed by another towards an end; and do not act of themselves, as if they directed themselves towards an end, like rational creatures, through the possession of free will, by which these are able to take counsel and make a choice… since the very act of free will is traced to God as to a cause, it necessarily follows that everything happening from the exercise of free will must be subject to divine providence (Aquinas, 2006, p. 513).

Chapter 3

The Value Free Ideal and the Ensuing Problems for Achieving Objective Knowledge

Mapping the Value Free Ideal: Weber

The problem of the limits of the inquirer's ability to employ reason to assess and direct the influence of how her / his values / background assumptions contribute to epistemological inquiry has largely guided educational scholarship on how they are to render the value-free ideal and the aim of objective knowledge. This discourse has centered primarily on the four factors of the subject / object dichotomy, the cognitive / non-cognitive and fact-value distinction, and the relationship between the individual and the community. In this chapter, I will look to points of scholarly contention within these key factors that have guided much of the debate regarding how educational scholars within social science are to address the value-free ideal and the aim of objective knowledge. I seek here to show that, due to the belief in scientific knowledge as an independent enterprise from its religious roots, the contemporary problem of the value-free ideal and the general aim of objective knowledge has become an intractable one which has forestalled leading feminist philosophers in their aim to reflect the interests of women with an adequate conception of knowledge.

Thinkers who have played a major role in charting these points of contention are Max Weber and the attainability of value-neutrality, Thomas Kuhn and his theory of the incommensurability between scientific communities; Willard Quine's suggestion that evidence can underdetermine theory, the feminist empiricist insistence that rational discernment can advance scientific epistemology beyond the value-free ideal as submitted by Elizabeth Anderson, Helen Longino and Heather Douglas; the feminist standpoint position that shared feminist values as discerned from the woman's social location can yield objective knowledge as submitted by

Sandra Harding; the feminist postmodern view that objectivity is not a sustainable aim for feminist educational scholars, as submitted by Susan Hekman and Donna Haraway.

Since the plausibility of the value free ideal in achieving objectivity continues to be a central concern of philosophers of science, the debate has revolved primarily around appeal to humankind's rational faculty to adjudicate the role of values in scientific research. Max Weber is a major figure in espousing this belief, which appeals to dual capacity of the reasoning faculty as an instrument of inquiry as the final transcendent mediating authority needed for objectivity. Here, I will discuss Max Weber's influential belief in the concept of value-neutrality as an essential adjudicating principle that would ensure a fact-value distinction, a distinction uniquely necessary to ensuring the plausibility of the social science of human behavior. Weber contributed significantly to the narrative in educational research of the role values ought and ought not to have in scientific inquiry so that scientific objectivity can be achieved. For Weber, since values necessarily informed the way human beings (including scientists) saw the world, he believed that social scientists would need to (with, of course, the assumption that they were able to) clarify theoretical standards and establish methodology that would allow values their inevitable roles but, nonetheless, roles that would ensure sound scientific procedure; in other words, acknowledgement and proper utilization of values to suit the realm of scientific enquiry would, according to Weber, legitimize social science as a science. How did Weber seek to accomplish this? Weber believed that if the human subject were to inquire into the human social landscape, the methodology of such an inquiry would differ from the scientific inquiry of the world of nature, simply because the human being would be both the subject and object of inquiry; she / he would need to chart how to both curtail and enhance human factors in inquiry that may affect the plausibility of results and procedure in such an undertaking.

To accomplish this, Weber asserts the suitability of the desideratum and ability of human beings to valid empirical inquiry. This is key to understanding his position on the power of reason to both limit and allow the influence of values. He speaks of “our capacity and need for analytically ordering empirical reality in a manner which lays claims to validity as empirical truth" (1949, p. 58), but stops short of how this “capacity and need” might broach his conception of what amounts to values / background assumptions. For Weber, the inherent human capacity and need for empirical inquiry seems to, somehow, position values and rational ability in their proper place: he asserts our human “need and capacity” in empirical inquiry as sufficiently more mutually independent, parallel human characteristics than as those of a reciprocal or even identical nature. So, for Weber, to investigate the need and capacity for empirical inquiry within the context of historically rooted appeal to the transcendent is, perhaps, to insinuate assessment of the validity of values, which is an investigation that should be external to scientific concerns: “Only on the assumption of belief in the validity of values is the attempt to espouse value-judgments meaningful. However, to judge the validity of such values is a matter of faith” (Weber, 1949, p. 55). How much “need” adds or negates in the credibility of the “capacity” of human beings to conduct empirical inquiry with the necessary autonomy, he does not say.

For Weber, the social scientist also needed to clarify and demarcate the cognitive and non-cognitive roles in a social scientific pursuit of inquiry that was value-neutral if scientific plausibility was to be achieved. For Weber, non-cognitive values necessarily contribute to enable the social scientist to distinguish the significant from the insignificant issues that face human social life: “the significance of cultural events presupposes a value-orientation towards those events” (1949, 76). Therefore, non-cognitive values are to play a role in determining the choice of hypothesis, with the social scientist nevertheless prioritizing via the faculty of reason certain

non-cognitive values over others. Once the choice of hypothesis has been made, non-cognitive values can be neutralized to serve only this function, while cognitive values are neutralized to take over and guide the methodology of the inquiry; for, if non-cognitive values were to gain access into the methodological process, the scientific capacity to understand the object of human behavior (human action and what motivates it) would be compromised: "…it should be made explicit just where the arguments are addressed to the analytical understanding and where to the sentiments" (1949, p. 60). This theme of the scientist accepting the inevitable role of non-cognitive values while, at the same time, asserting belief in the autonomy of her rational faculty to mediate (thus, harness) the influence of these values is a major one that I will return to in my discussion on how the feminist empiricist address the value free ideal and the attendant issue of objective knowledge. For Weber, the vocational task of the scientist appears to be the substitute justification for the philosophical defense of the mediating power of reason which, in effect, replaces the historical appeal to the transcendent as justification for the employment of reason in scientific inquiry.

To further chart how to both curtail and enhance human factors in inquiry that may affect the plausibility of results and procedure in such an undertaking, Weber argues that the values inevitable in guiding inquiry are not to have a normative role; that is to say, though the social scientist can ascertain the means people use to accomplish ends, and predict how successful such an employment of such means may be to achieve the respective ends, she / he cannot justify the ends. Indeed, the social scientist has a viable role to play in a society by pointing to how achievable social goals in a given structure are; for instance, a scientific examination of the means to achieve a public policy could point to the challenges that the stated ends posed. The principle of value neutrality also clarifies the pursuit of science (be it natural or social) strictly as

a descriptive pursuit, as opposed to an enterprise that includes normative concerns. Even the validity of science itself falls outside the social scientist's scope and purpose: "Normative standards of value can and must be the objects of dispute in a discussion of a problems of social policy because the problem lies in the domain of general cultural values" (Weber, 1949, p. 56). In other words, for Weber, the neutralization of cognitive and non-cognitive values helps articulate the parameters of the vocation of the scientist, requiring her / him to anticipate, thus, negate the problems the fact-value dilemma poses.

The distinction and correspondent employment of cognitive and non-cognitive values in social scientific inquiry differ from their employment in natural scientific inquiry and this distinction articulates how Weber viewed the problem of objectivity via the subject-object relationship in scientific inquiry. First, as has been discussed, since non-cognitive values guide the choice of inquiry for the social scientist, values necessarily establish a relationship between the subject and object; without the initial guidance of non-cognitive values such as, say, the value of authority, the object wouldn't even be identifiable. Second, in Weber's view, as the natural scientist (as inquiring subject) does, the social scientist inquiring subject seeks to gain a causal understanding through an empirical perspective, but the natural scientist utilizes cognitive values (such as comparing and simplicity) to observe external events according to natural law so as to serve the end of ascertaining causation; the social scientist subject, however, utilises these tools to assess the manner of causation by interpreting the object of observable human behavior and the motivations which yield that behavior. In other words, the nature of causation would be understood by the subject's empirical analysis of the relationship between these two phenomena of the object, via 'imputation' (Weber, 1949, p. 79). For the social scientist, using 'imputation' to understand causation is a means to the end of understanding culture (Weber, 1978, p. 13):

> The question of causality is not a question of laws but of concrete causal relationships; it is not a question of subsumption of the event under some general rubric as a representative case, but of its imputation as a consequence of some constellation. It is in brief a question of imputation" (Weber, 1949, p. 79).

Framing the problem of causality as "a question of imputation" does not dissolve the subject-object dichotomy, but it nevertheless introduces the mediating factor the social scientist is uniquely bestowed with and negates somewhat her strict status as a passive observer under natural law. At the same time, this negation brings focus to the problem of a possible disparity between the objective goals of the social scientist and the confidence in her role to station her values accordingly.

Weber's view of the relationship between the individual inquirer and her / his community in inquiry is that research which has been conducted in a manner that is accepted as valid by one's peers is also what contributes to and validates scientific objectivity. Hence, whether processes and findings deserve to be called such is a social issue, for they must meet approval beyond the individual social scientist: "But it obviously does not follow from this that research in the cultural sciences can only have results which are "subjective" in the sense that they are valid for one person and not for others. […] For scientific truth is precisely what is valid for all who seek the truth…" (Weber, 1949, p. 84). In turn, inquiry intended to be scientific is not scientific truth if it is 'subjective' in its grounding, without a social mechanism of approval- if only one person concludes that her processes and findings are valid. Finally, objectivity is a plausible contributor to the dialogue that aspires to truth in general: "In other words, the choice of the object of investigation and the extent or depth to which this investigation attempts to penetrate

into the infinite causal web, are determined by the evaluative ideas which dominate the investigator and his age" (1949, p. 84).

In this way, Weber, like Kant before him, was less interested in scientific objectivity as an understanding by the individual knower of the thing in itself, but rather the individual scientists' contribution to the scientific community in his / her efforts to understand and utilize how knowledge is acquired in human beings. Therefore, for Weber, objectivity, with values as a necessary component of the attainability of truth in the processes and findings of social science, is attainable, but *within the spectrum of science;* and if a particular research is adequately objective, then it can be accepted *as science.* Moreover, without the judicious use of values, the objectivity of science is impossible: "There is no absolutely objective scientific analysis of […] "social phenomena" independent of special and "one-sided" viewpoints according to which expressly or tacitly, consciously or unconsciously they are selected, analyzed and organized for expository purposes" (Weber, 1949, p. 72). The issue of the role of values in the value free ideal and the attainability of objectivity draws focus to two major components: the subject-object relationship and the fact-opinion distinction (or lack thereof) in scientific inquiry.

The Challenge of Incommensurability: Kuhn

As I have referred to Weber's influential contention that value-neutrality is both possible and essential in inquiry within social scientific research, I move here to discuss the influence of Thomas Kuhn on the pertaining factors (the cognitive / non-cognitive and fact / value distinction, the subject / object dichotomy and the relationship between the individual and the community) of how contemporary scientific researchers are to render the value-free ideal and how the goal of objective knowledge ought to be understood in educational scholarship as a social science. Specifically, I will refer to how his theory of incommensurability would contribute to the

changing role that values would have in epistemological inquiry. Values serve less as phenomena for the particular social scientist / community to ascertain and more to express the nature of development of scientific inquiry for that particular community. This emphasis on community-based measures of scientific validity undermines the assumption held by Weber that the value free ideal and the scientific objectivity that is attainable through this ideal precludes the respective values of the particular scientist / scientific community. This would create space to legitimately afford investigation into background assumptions, such as religious roots, that can, indeed, be employed to not necessarily question the validity of empirical inquiry, but the particular values that have guided it. Further, the social scientist could investigate what common religious elements (if any) exist between different value sets of inquiry of respective communities.

Kuhn's theory of incommensurability, or "lacking common measure" argues that there is a pattern of evidence in the historical record of scientific revolutions, which indicates that change happens during conditions where identifiable competing *paradigms* exist. Kuhn describes paradigms (as opposed to competing paradigms) as "universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners") (1970, p. 22). The respective paradigm within which scientific model problems and solutions are approached is characterized by two senses:

> the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community. On the other, it denotes one sort of element in that constellation, the concrete puzzle-solutions which, employed as models or examples, can replace explicit rules as a basis for the solution of the remaining puzzles of normal science (1970, p. 175).

Kuhn refers to the nature of scientific development within the dominant paradigm as ‘normal science’: the world view of scientific inquiry that adheres to established values (1970, p. 8), within which scientific progress can take place. However, once members of the scientific community find “anomalies” (discoveries that do not correspond to the established ‘normal science’ paradigm of shared values and methods (Kuhn, 1970, p. 92) at a level of frequency and significance that they threaten the scientific community’s adherence to established aims and scope of the values that the manner of scientific inquiry purports to correspond to, a ‘paradigm shift’ of ‘revolutionary science’ occurs: new methods of scientific inquiry are introduced to address these anomalies, the process of which may even yield scientific conclusions that the original paradigm can no longer explain. An example Kuhn gives is the Copernican heliocentric view of the universe that was recognized as taking over the Ptolemic geocentric position; this occurred due to differing problem models (1970).

The significance of Kuhn’s theory of incommensurability in the development of the role of values in social science is his conception of how scientific inquiry and findings have been accepted or replaced. First, Kuhn uses his concepts of paradigms and paradigm shifts to contend that, through history, the individual autonomy of the scientist to utilize empirical reason through cognitive methods is subordinate to the underlying scientific values of her community as the primary engineer of the processes and findings of scientific inquiry. The test of commensurability functions to illustrate this disparity between the influence of community values and the superficial autonomy of individual inquiry: if the respective scientific community partakes in inquiry through which all share approved (and, hence, normative and common) theoretical and methodological approaches, it is of a common measure (thus, commensurate) within itself; however, if a subdivision within this scientific community rejects these otherwise

shared processes and findings, due to the perceived “anomalies” (Kuhn, 1970, p. 92), this subdivision does not subscribe to the same scientific values. Kuhn uses the historical example of the discovery of oxygen. Different discoveries had different assessment models and concepts:

> Priestley’s claim to the discovery of oxygen is based upon his priority in isolating a gas that was later recognized as a distinct species. But Priestley’s sample was not pure, and, if holding impure oxygen in one’s hands is to discover it, that had been done by everyone who ever bottled atmospheric air (1970, p. 54).

The nature and trajectory of scientific inquiry is primarily dependent on a scientific community and its subdivisions, not the individual scientist and her imagined autonomous investigation. According to Kuhn, since a finding necessarily articulates the nature of discovery at the same time, he submits that if the scientist discerns a lack of consistency between a finding and the purported prescription of discovery the finding is to correspond to, “the anomalous [may not] become the expected” (1970, p. 53), thereby increasing the likelihood of a paradigm shift, as in Kuhn’s contention that it is a mistake to make the claim that “oxygen was discovered” if the values and methods that underlie discovery are no longer commensurable with the claim:

> ...The sentence, “Oxygen was discovered,” misleads by suggesting that discovering something is a single simple act assimilable to our usual (and also questionable) concept of seeing. That is why we so readily assume that discovering, like seeing or touching, should be unequivocally attributable to an individual and to a moment in time (1970, p. 55).

Second, since the individual’s theories and findings are precluded by the values of the scientific community, clarification is needed as to what objectivity denotes from this perspective

and what it ought to aspire to, if anything. Kuhn and Weber shared a similar understanding of a major purpose of the scientific community: to validate or invalidate the inquiry of the individual researcher. Since the respective scientific community determines the process of scientific inquiry, central to the decision on a particular inquiry's validity was the level of its correspondence to that particular community's set of values "…in paradigm choice-there is no standard higher than the assent of the relevant community" (Kuhn, 1970, p. 94). But, whereas Kuhn discerned, in agreement with Weber, that a community-based validation of a scientific inquiry indicated objective truth for the particular community, Kuhn would see Weber's idea of objectivity as the seeking of truth, only within a finite paradigm; hence, a narrative of objectivity that displayed an internally consistent articulation of a community's values.

Unlike Weber, who did not directly address the issue of scientific progress as one that pertained to the issue of objectivity (1918), Kuhn's theory of incommensurability rejects the idea of linking objectivity to scientific progress. The historical record of belief in the advance of objectivity and scientific progress, for Kuhn, does not take into account what components differentiate the approach of those within the paradigm from the approach of the revolutionary scientists (Kuhn, 1970). To consider the problem of objectivity and scientific progress, points of contention that result in incommensurability need to be addressed in an exhaustive, consistent manner. Such an effort might render concepts such as 'objectivity' and 'progress' as 'redundant', given the inherent role of community values in scientific inquiry:

> First, the new candidate must seem to resolve some outstanding and generally recognized problem that can be met in no other way. Second, the new paradigm must promise to preserve a relatively large part of the concrete problem solving activity that has accrued to science through its predecessors (1970, p. 169).

Underdetermination and the Advance of the Role of Discovery in Epistemological Inquiry: Quine

A further influential challenge to value-neutrality, which was supposed to enable the scientific community to achieve a commensurable, coherent epistemological approach was Willard Quine's investigation of the problem of whether evidence through observation was sufficient to justify a universal theory; if observation of an object is submitted as evidence, would it not be valid for more than one theory to substantiate it, making the respective evidence dependent on the assumptions / values that have been adopted (1975)? Clearly, such a case argues for clarification on the background assumptions that inform the nature of the discovery.

Quine's theory of underdetermination poses yet another problem for the challenges the role of values poses to rendering how the value-free ideal ought to be understood by educational scholars within social science: that if the validity of a theory is compromised by the pre-condition of values, there is the additional problem of the dimension of choice, of which values to adopt in scientific inquiry. The problem of how to validate scientific inquiry through distinguishing cognitive / non-cognitive values is, thus, quite problematic if Quine's theory of underdetermination is accepted; for, if theory is underdetermined by evidence, it raises the possibility that not only might the inquirer not be able to establish one valid set of cognitive principles to plausibly preclude such an underdetermination, but that the allowance of the selection of values as acceptable epistemic virtues cannot necessarily be excluded. The choice of values obviously invites the problem of how much (not if) such a choice will influence results of inquiry.

How did Quine hope to ensure that science could harness and direct values so as to prevent their overtaking of the descriptive purpose of science? For Quine, testing values against

their verifiability in experience is how fact and value can be discerned, not on a metaphysical level, but within science, so Quine sought to achieve this by discerning the "web of belief". In Quine's view, the Web of Belief can address the problem of establishing a non-normative approach by neutralizing the role values play towards a descriptive, fact-gathering scientific process. The scientist can test the plausibility of claims by subjecting background assumptions to the broader web of beliefs that are legitimated through empirical inquiry. When contradictions are found, the inquirer can revise her beliefs accordingly.

However, for the scientific inquirer to aspire to achieve absolute objectivity in the first conception (as an attainable reality that is independent of the knower) would be an exercise in folly, since that would require an unrealizable distinction between fact (synthetic) and value (analytic): Underdetermination precludes the scientist from discovering a clear distinction between facts and values that makes them discernably independent of one another in their attributes. This role of values is illustrated in Quine's rejection of an analytic (propositions based in meanings) / synthetic (propositions based in fact) distinction in scientific inquiry:

> It is obvious that truth in general depends on both language and extralinguistic fact... Thus one is tempted to suppose in general that the truth of a statement is somehow analyzable into a linguistic component and a factual component. Given this supposition, it next seems reasonable that in some statements the factual component should be null; and these are the analytic statements. But, for all its a priori reasonableness, a boundary between analytic and synthetic statements simply has not been drawn. That there is such a distinction to be drawn at all is an unempirical dogma of empiricists, a metaphysical article of faith (Quine, 1951, p. 34)).
>
> Quine's theory of underdetermination serves to substantiate the claim that without a

clarification on the relationship between the role of appeal to the transcendent and the contemporary problematic belief in the final arbitrating power of the scientist's reason to mitigate and assign the influence of values, debate on the value-free ideal and the attendant aim of objective knowledge will not advance in a significant measure.

The Compatibility of Feminist Values and Reason in Empirical Inquiry?

If choice of values is a legitimate, or even unavoidable, component in scientific inquiry, to what extent would the field of scientific inquiry become more of a cultural, pluralistic landscape and less of an enterprise that provides applicability? Also, how would the incorporation of purposeful choice of values into standard social scientific inquiry (if adopted) affect the challenges of the demand for universality? To address these issues, feminist proponents of scientific empiricism, postmodernism and standpoint theory have emerged. Leading voices in each area will be explored in a discursive manner here to assess the unresolved, yet primary issues of the cognitive / non-cognitive distinction, the fact-value problem, the subject-object relationship and the individual / community role in social scientific inquiry as representative dimensions of the role values play and ought to play in the social science of educational scholarship.

Though all three feminist approaches share the belief that feminist values can and should be essential to the study of epistemology, the nature of the relationship between articulating feminist values and the study of epistemology is much debated. Despite the fact that the scientific method, as a means of objective knowledge, is not generally in dispute within feminist empiricist discourse, the role background assumptions ought to have in empirical inquiry is a point of contention regarding the cognitive / non-cognitive dichotomy, the fact-value distinction,

the relationship between the subject inquirer and the object of her inquiry and the relationship between the individual inquirer and the broader community.

Though Quine's underdetermination theory allows for choice in selecting non-cognitive values with which to construct theoretical and methodological inquiry, it still allows for a clear fact-value distinction via the web of belief mechanism (Quine, 1978). However, this leaves a void for how to discern which values are acceptable to incorporate and which are not. Feminist empiricist Elizabeth Anderson argues that criteria can be established for which non-cognitive values can and cannot be accepted as legitimate in scientific inquiry. In pointing out that underdetermination necessarily allows for choice in background assumptions and that it does not discriminate between which moral and political values have more epistemic value than others (Anderson, 2004), Anderson focuses on the epistemic nature of value judgements to reach an appropriate criterion. Any such criteria, in Anderson's view, must be based on principles that will ensure that the function of value judgements does not serve to narrow the possibility towards a conclusion that is destined to be predetermined (2004). This is how acceptable and unacceptable criteria will be assessed; the background assumptions provided to test a particular theory cannot be the same values which constructed that theory to begin with (thereby resulting in a circular argument).

Among other tools to create legitimate value judgments, Anderson proposes a discerning method to distinguish acceptable bias from unacceptable bias, since no scientific inquiry can completely avoid it. She identifies three types of bias: bias that pertains to a question or controversy, bias which pertains to the object of the inquiry, or bias that pertains to testable hypotheses (2004). She explains them thusly:

> A research design is biased in relation to the object of inquiry if it (truthfully) reveals only some of its aspects, leaving us ignorant of others. It is biased in relation to its hypotheses if it is rigged in advance (whether wittingly or not) to confirm them. It is biased in relation to a question or controversy if it is more likely to (truthfully) uncover evidence that tends to support one side rather than the other sides of the controversy (Anderson, 2004, p. 18).

In Anderson's view, bias in choosing non-cognitive values that pertain to the object under inquiry cannot be completely avoided; there is no such thing as a research design that will fully defy any and all background assumptions and yet yield fully comprehensive evidence that transcends the finite nature of the design; an example she uses is if cancer were viewed as a genetic disease, the researcher can conduct research into genetic causes, but the means used (such as genetic tests and family histories) will not yield knowledge about the dietary factors in developing cancer.

Bias in background assumption choice that pertains to hypotheses, however, is unacceptable since, as mentioned, it invites a dogmatic, circular inquiry; there must be room for evidence to not run parallel to the theory; to substantiate her claim that value-laden research does not necessarily repeat the background assumptions of the inquirer, Anderson refers to colleagues' research on divorce cases ("Separating Together: How Divorce Transforms Families") which had results that did not confirm the background assumption that had been chosen. Rather, it was the evidence that would determine the validity of the findings (Anderson, 2004, p. 19).

Bias in non-cognitive background assumption choice that pertains to a question / controversy is revealed in the increased likelihood of showing evidence that indicates support exclusively for one position and not others on the question / controversy. Such bias in the choice of background assumptions can be addressed through 'fruitfulness': a principle that distinguishes a background assumption as more valuable than another by yielding a broader range of evidence that can be gathered which might address concerns that the controversy / question has raised. Anderson refers to the example of a study of divorce under the theoretical framework of a conception of loss, which is a negative non-cognitive background assumption that makes it possible for the research to uncover the negative aspects of divorces, not the positive (2004). Non-cognitive values can not only have a valid normative role in scientific inquiry, but the normative aspect can validate the epistemic values that guide research. Anderson argues:

> It is precisely because subjective emotional responses and emotion-laden interpretations are normatively relevant to judgments of well-being which makes [certain research programs] more fruitful than research programs that focus only on objective measures. It is precisely because subjective emotional responses and emotion-laden interpretations are normatively relevant to judgments of well-being that … makes…research more fruitful than research programs that focus only on objective measures (2004, p. 21).

If, as Anderson submits, the feminist empiricist is right to use a set of criteria to discern which non-cognitive values have epistemic value and which do not, the premise that choice of values is consistent within the underdetermination theory raises the question for the empiricist: of what use, then, is the value free ideal?

A representative view in feminist empiricism that addresses this question is articulated by Heather Douglas, who argues that the "value free" ideal needs to be jettisoned altogether. The argument by value free proponents, that values ought only to guide the aims of inquiry ("the external parts of science") (Kindcaid, 2007, p. 121), framed values which contributed to the means of inquiry (the internal parts) as "non-epistemic values" (Kincaid, 2007, p 120). Value-free idealists ostensibly employ strictly reason-based cognitive values, managing in the process to exclude other values through this faculty of reason. This misguided ideal effectively fails to acknowledge the advancement over recent decades that not only values generally play a role in scientific justification, but that what are considered "non-epistemic values" play a role as well (Kincaid, 2007). First, Douglas refers to how non-epistemic values are inevitably involved in assessing risk in scientific inquiry. One example she uses is a re-evaluation conducted of Maine's water quality standards in the 1990's in which the conclusions yielded a high degree of uncertainty and a significant risk of error. A decision based on risk through false positives would create unnecessary fears; a decision based on false negatives on the other hand, could possibly jeopardize the health of Maine's water consumers. For Douglas, this is an illustrative example of how non-epistemic values inevitably come into play to evaluate risk when conclusions based on cognitive values fail to tip the balance (Kincaid, 2007).

A second point Douglas makes in her case against the value-free ideal (through which exclusively reason-based cognitive values are to be used) is that the nature of the relationship between policy makers and scientists necessitates an onus on the latter to make interpretative judgements based on the data gathered. Douglas uses a point of contention in toxicology to assess the relationship between dosage and response: whether there are thresholds that apply to particular carcinogens. Different perspectives of dose-response data sets come with different sets

of background assumptions that inform them, such as how the mechanisms of bio-chemicals work in different cases. The vocation of the scientist, then, is not simply restricted to relaying data to policy makers, but to use her non-epistemic values (such as weighing the social benefits against the risks) to mediate as an interpreter to assist in the social policy the data is intended to inform (Kincaid, 2007).

Helen Longino advances another position at the forefront of the discourse on the role of values in social science, going one step further than Anderson and Douglas; arguing that not only scientists ought to accept the value-laden nature of scientific inquiry, but that scientists need to re-assess whether it is plausible to even distinguish cognitive and non-cognitive values in scientific inquiry. The view of cognitive values as having the quality of "context-independent universalist status" is precisely what invalidates the cognitive / non-cognitive value dichotomy, according to Longino (Longino, 1997, p. 54). She argues that what values have been traditionally referred to as strictly cognitive are, actually, value-laden and context-dependent (1994). Longino refers to the underdetermination theory as a defense of this position. Since submitted evidence cannot be proven to necessarily correspond to only one theory, how could a dichotomy between cognitive and non-cognitive values be sufficiently drawn? For, "Underdetermination arguments are arguments to the conclusion that data serving as evidence for hypotheses or theories are not sufficient to support a hypothesis or theory to the exclusion of alternatives" (1994, p. 475); "The full content of a theory outreaches those elements of it (the observational elements) that can be shown to be true (or in agreement with actual observations)" (Longino, 1997, p. 39). In other words, a prescriptive cognitive / non-cognitive distinction would not adequately address the lack of theoretical accountability that evidence is supposed to produce and would, instead, risk

excluding background assumptions ("non-cognitive" values) that may contribute to determining evidence.

For Longino, cognitive values are necessarily politically inclined, so they need to be comprehensive if they are "conduc[ive] to the truth" (Longino, 1997, p. 40). As a feminist empiricist, she assesses whether cognitive values are conducive to feminist scientific inquiry. Traditional cognitive values are not conducive to the truth that feminist empiricists seek because the former tend to be "politically regressive" by favoring sameness and rejecting difference. Among others that Longino cites, one example of traditional cognitive values as insufficient criteria is *ontological homogeneity*. Longino argues in support of feminist scientists who urge for the retention of acknowledging difference between samples and individuals of the object of research; such an acknowledgement would limit the risk of resultant theories and conclusions of gender inferiority by following not the cognitive criteria of ontological homogeneity, but ontological heterogeneity as a more accurate reflection of feminist scientific aims (Longino, 1997). For Longino, the scientist's commitment to the cognitive principle of ontological homogeneity is a partiality towards sameness and away from difference, which "operate[s] to drive inquiry to a predetermined conclusion" thereby undermining scientific inquiry in general (Anderson, 2004, p. 1).

So, for Longino, the question needs to be addressed: how cognitive are cognitive values really? She answers that scientists should not necessarily distinguish between cognitive principles that are to constitutive of scientific understanding from contextual values which are the broader values and belief systems within which scientific pursuits take place. Scientists should, therefore, not conflate conventional cognitive principles of science, such as truth-finding, with exclusively rational criteria, such as simplicity or unification; for, such a conflation asserts

rational cognitive principles as superior pursuits to values that are employed in feminist science, such as mutual interaction and ontological heterogeneity. Longino argues that traditional ideas of what can be admitted as cognitive values implicitly forbid diversity. More specifically, she submits that traditional conceptions of what counts as the cognitive values forbid values not embraced by the middle class white male. According to these standards, "Difference must be ordered, one type chosen as the standard, and all others seen as failed or incomplete versions… Difference is then treated as a departure from, a failure to fully meet, the standard, rather than simply difference" (Longino, 1992, p. 337). In other words, it is a false dichotomy: what has been simply different has been inadequately construed as "non-cognitive".

Moreover, in accepting Quine's view that evidence (via data collected) underdetermines theory, Longino argues that descriptions of data and descriptions of theory (which the data is supposed to support or negate) tend to be different in that data descriptions use correlational language, whereas theoretical descriptions use causal language. This suggests, argues Longino, that the relationship between data and theory does not only fail to prevent other theories from being plausible (Longino, 1997), but more importantly, this also indicates that background assumptions (values) mediate the relationship between how data and theory are explained; "no purely formal relations can be established between them" (1997, p. 39). If the empiricist accepts that background assumptions have this mediating role, one question of importance is whether what has been traditionally referred to as "cognitive" values (as epistemic virtues) to discover truth is sufficient to account for this mediating role. To address this question, Longino presents the traditional conception of cognitive values as "a quality of theory, models, or hypothesis that can serve independently of context as a universally acceptable criterion of epistemic worth" (Longino, 1994, p. 42). She cites Kuhn's list of cognitive values as an example of what are

representative traditional cognitive values: accuracy, consistency, scope, simplicity and fruitfulness. She argues that this list does not adequately suit feminist cognitive goals which subscribe to the belief that background assumptions mediate the relationship between theory and discovery (through articulation of discovery from data collection). An alternative list that includes values such as complexity of relationship (1994), empirical adequacy, novelty, and ontological heterogeneity, would more accurately reveal that the two sets of cognitive values subscribe to divergent cognitive goals; such an alternative list of cognitive criteria would enable feminist scientists to adequately pursue their aims by ensuring that gender is not relegated in significance in any way, through adherence to principles that "reveal or prevent the disappearing of the experience and activities of women and / or to prevent the disappearing of gender" (Longino, 1994, p.481).

This affirmation of adherence to cognitive principles that concord with feminist aims is also an affirmation of the challenges underdetermination poses to the cognitive / non-cognitive dichotomy; for, if evidence underdetermines theory, criteria that accommodates and even fosters recognition of difference and diversity shifts assessment of cognitive criteria towards the credibility of scientific aims (such as feminist epistemological goals), thereby serving to question the validity of the value free ideal and the attendant conception of objectivity.

In light of these criticisms / proposals from leading feminist empiricists that non-cognitive values be afforded epistemic value, how might they render the subject-object relationship be understood? Branching from her argument that non-cognitive values can be a legitimate contribution to scientific empirical research, Anderson takes a position against the traditional belief in emotional detachment, that proper criteria to distinguish legitimate and illegitimate non-cognitive values re-orients how the subject inquirer and the object of her

research ought to be understood. With the augmentation of the relevance of background assumptions in research, knowledge of the object of inquiry becomes less of a metaphysical endeavor to understand the object itself and more of a relational dynamic. Anderson argues that value judgements are “emotional experiences” (Anderson, 2004, p. 9), because they invariably refer to people, states, events and things; they also see the object through a positive or negative lens and that the subject exhibits a caring nature towards themselves and / or to the object of inquiry. These affect our value judgements and, therefore, should not be dismissed as insufficient to meet legitimate criteria for permissible research (Anderson, 2004).

As noted, there has been a consistently held belief, from the representative theories of Weber, Kuhn and Quine, that even though values have a role in scientific inquiry, they can and must be autonomously distinguished in their descriptive and normative capacities and, therefore, utilized as such; non-cognitive value judgements have been said to undermine the essential value-neutral approach that helps validate scientific inquiry. Expanding her argument that non-cognitive values play a valid role in scientific inquiry, including the emotional dynamic the inquirer can have with the object of inquiry, Anderson contends that the role of non-cognitive values for the scientific inquirer allow the inquiry to play both a descriptive *and* a normative role at the same time, thus allocating normative authority to the feminist empiricist (Anderson, 2004).

In reference to different approaches to research on divorce, Anderson points to “thick evaluative concepts” of the object of inquiry that invariably express fact and value judgments at the same time. Thick concepts are employed to attach the factual aspect of an event or phenomenon to follow the assumptions that are at the roots of it: “The factual components of thick concepts are selected to track their underlying evaluative point” (Anderson, 2004, p. 14). For example, Anderson refers to psychologists Judith Wallerstein and Joan Kelly’s employment

of the negative concepts of “trauma” and “loss” as thick value judgements executed to understand divorce by extending understanding of trauma from sudden physical injury to psychological damage (2004, p. 13). Such value judgments of divorce as “trauma” and “loss” necessarily steer the direction of the research to seek out particular types of research methods that will yield findings of particular types of evidence, such as tools to assess psychological damage. However, employment of the positive thick evaluative conception of divorce as “opportunity for personal growth” (as performed in the Stewart el al study) shifts the direction of research towards divorce as a means of a spouse to “construct a better future” (Anderson, 2004), thereby framing divorce not as an “event” that yields trauma and loss but, in consistency with feminist aims of emancipation, [as] a long process of coming to grips with that failure” (2004, p. 14).

However, Anderson argues that the Stewart et al approach went further and incorporated both thick evaluative judgments, including both conceptions of divorce in their inquiry; such an approach, then, in Anderson’s view, should be seen as following a more legitimate research criterion because, unlike research that characterizes divorce as a primarily negative process (via the evaluative concepts of loss and trauma), the study conducted by Stewart et al included both positive and negative evaluative judgments (loss and the opportunity for positive growth) “to track their evaluative points” (2004, p. 14). Hence, by employing the cognitive criteria of acknowledging and incorporating difference into positive and negative evaluative concepts, the Stewart et al approach yields a higher chance that evidence may not necessarily merely reflect the foundational assumptions of the pertaining theory. The philosopher of science can see this effort by Anderson as an attempt to add credibility to Quine’s web of belief while, at the same time, employing the theory of underdermination in a way that helps, not undermines, the feminist

empiricist position. If both positive and negative thick evaluative concepts can be used, would this not work positively to bridge the gap between assumptions and empirical observation? However, with respect to Kuhn's theory of incommensurability, the proposal of adding positive and negative evaluative concepts to research in order to reduce obstructive bias does necessarily result in a common measure that can transcend paradigms. Hence, bridging the gap between evidence and theory (through constructing variation of evaluative concepts) does not result in a standard that can serve as an alternative to the value free ideal and the attendant aim of objectivity.

How does the inclusion of acceptable non-cognitive values or the dismantling of the cognitive / non-cognitive dichotomy into scientific inquiry affect the challenges of objectivity for feminist empiricists? A representative view is Helen Longino's position that the issue of objectivity centers on the problem of how to validate background assumptions so that the problem of subjectivity may be avoided. To address this "false dichotomy" of cognitive and non-cognitive values and, at the same time, anticipate the problem of subjective leanings to decide background assumptions, Longino calls for a *contextual empiricism* (Longino, 1997); this approach would confront the problem directly of what common factors determine background assumptions. Contextual empiricism proposes the intersubjective discursive interaction between individual scientists to share their own viewpoints. Such interaction would, in Longino's view, prevent the dominance of a single set of assumptions or individual "idiosyncracies" from controlling the manner of inquiry. To enable the subjective to become objective, criteria can be created that would "specify features of the design and constitution of a community that facilitate transformative criticism and enable a consensus to qualify as knowledge" (1997, p.40). Four requirements would need to be met in order for scientific knowledge to be considered

"objective". First, there needs to exist a publicly acknowledged landscape for adequate criticisms of method of scientific inquiry (Longino, 1991), manner of evidence gathering, validity of background assumptions and logical approaches. Second, scientific knowledge can qualify as objective if a distinguishable characteristic of the community is an equality of intellectual authority. Third, there need to exist common standards of scientific inquiry that can be referred to (as established by the diverse voices within a community, thereby yielding an ontologically heterogeneous component). And fourth, the community as a whole must be responsive to criticisms that are brought forth (Longino, 1990).

Lynn Hankinson Nelson illustrates an alternative understanding of how objectivity can be arrived at within feminist empiricism. Nelson agrees with Longino and Anderson that scientific inquiry cannot produce evidence that conforms to one theory, but in a departure from Longino, argues that determining a viable approach to evidence-gathering is a social domain, not an individual one. Following Quine's theory of underdetermination and Kuhn's argument that scientific knowledge does not transcend communities, Neslon argues for a naturalized epistemology, that it is communities (not only the immediate scientific body) that "construct and acquire knowledge", whereas individual knowledge is derivative of the community (Nelson, 1993, p. 124). The agents of knowledge construction (for example, those who bring about collaboration and consensus) are communities and sub-communities that establish a coherent theoretical and methodological framework of scientific inquiry (1993). Nelson uses the example of the discovery of proton structure that was enabled, in her view, only because there existed "a going system or context of theories and practices. That context included…a theory in which proton [sic] figured; methodologies, projects and standards of evidence that emerged concomitantly in the process of building that theory…; and a science community (or

communities) that constructed or adopted these and rejected possible alternatives (1993, p. 135). However, Nelson does not accept that the collective nature of scientific inquiry further substantiates the underdetermination argument that evidence cannot account exclusively for one set of background assumptions. It substantiates, instead, that empirical inquiry ought to be embraced as a social endeavor, not as an objectivist one which depends on a white male-gendered conception of knowledge that is atemporal. If the set of beliefs within a community are reflected by the framework of the scientific inquiry, the number of theories that a body of evidence accounts for is reduced (Nelson 1993).

Feminist Standpoint Theory: An "Operationalized" Objectivity?

The significance of the role of values, particularly those that originate in the marginalized experience of women, advances in both aims and means of epistemological inquiry for Feminist Standpoint theorists (FST). However, this advancement of background values serves to enhance objectivity for FST proponents, thus inviting the issue of how religious roots of the necessary and the contingent contribute to this belief. Kristen Intemann notes that since proponents of Feminist Standpoint Theory (FST) do not subscribe to the conventional methodology of social science, their goal to advance knowledge by the marginalized can be characterized within the educational scholarship of social science as less of an alternative view of how empirical scientific claims can be justified and more as a methodologically focussed position on how to approach social scientific phenomena that can be consistent with principles of feminist empiricism (Intemann, 2010). Standpoint theorists generally understand the role of background assumption values in knowledge construction in a way that challenges the fundamental principles of the scientific method of empirical inquiry as a self-sufficient epistemological source. Harding argues that empiricists, even those who seek to advance feminist aims, wrongly believe that due

attention to current empirical approaches and norms alone are sufficient to address feminist aims of exposing gender bias (Harding, 1992). If there are cultural values and interests that are adhered to by most members of a scientific community, but are challenged by scientific research, Harding argues that this approach remains unaccountable and is, thus, insufficient to meet the marginalized cognitive interests of women (Harding, 1992). The reason for this, Harding contends, is that conventional feminist empiricism does not have a conception of objectivity that is adequately "operationalized" (Harding, 1992, p. 440): a framework of theoretical and methodological approaches that operates to identify assumptions that marginalize women. Such an operationalized approach would serve the purpose of advancing the marginalized cognitive interests of women (Harding, 1992). Such a dimension ensures a systematic identification and subordination of these values, thereby yielding facts that adequately represent a feminist perspective within a community (1992). A conception of objectivity as a strictly intersubjective, discursive interaction between individual scientists is, therefore, inadequate.

The marginalized standpoint of women determines the nature of the fact-value dynamic for proponents of FST. Wylie defines the "standpoint" of the feminist researcher as "a critical consciousness about the nature of our social location and the difference it makes epistemically" (2003, p. 31). The subject's relation to the aims of her study falls under the aim of FST, which is to better the lives of the marginalized; the subject inquirer will, thus, select an approach that represents the interests of women, the marginalized group of focus. An object of study will be chosen also to contribute to the subject inquirer's objective goals of advancing the marginalized interests of women. To contextualize this operationalized objectivity in regards to the underdetermination theory, the above standpoint-supported empirical inquiry goes one step further than conventional feminist empiricism by exploiting the allowance of what

underdetermination of theory through evidence can reasonably afford. If observations are theory-laden then, as feminist empiricists (such as Anderson, Douglas and Longino have argued), choice of background assumptions in theory design and methodological structure should be seen as validating mechanisms of empirical inquiry.

As a response to Anderson's concern that background assumptions can, if not checked with appropriate research criteria, lead to conclusions that merely reflect the hypothesis, Harding argues that the epistemological advantage of the marginalized does not necessarily lead to one's maximizing objectivity based on her own perspective (which, if true, would negate any significant distinction between fact and value); for, if the respective woman's marginalized perspective produces research that points to gender bias within a scientific community and the research aim is to advance the interests of women, it needs to be shown that such a perspective is attributable to an individual's position that is not consistent with the marginalized group she is said to represent. If such a determination is made, the particular case is not, somehow, universalized. The role of values and the distinction between values and fact for FST, then, is to enable marginalized inquirers to use resources of knowledge production, such as history, as "socially situating knowledge projects"; such resources would enhance scientific inquiry by adequately guiding it, not obstructing it (Harding, "Rethinking", 1992, p. 441).

Women inquirers, who are marginalized, acquire epistemic privilege and thereby re-orient the subject-object relationship. Alison Wylie articulates the starting point necessary for the re-orientation of the subject-object relationship that enables an operationalized objectivity, as shared by FST:

> Those who are subject to structures of domination that systematically marginalize and oppress them may, in fact, be epistemically, privileged in some crucial respects. They

> may know…some things better than those who are comparatively privileged (socially, politically) by virtue of what they typically experience and how they understand their experience (2003, p. 26).

Harding argues that there must be an inextricable relationship between what she calls, "The subject of knowledge" (Harding, 1992, p. 458) and the object of knowledge. The subject includes both the individual and the historically located social community, which is located via its history; the object includes the social community whose members have "unknowingly…unexamined beliefs" (1992, p. 458). Harding relates the subject-object relationship to objectivity in that inquiry maximizes objectivity if the object of inquiry is "the nature and / or social relations" which include the "observers and reflectors" such as scientists and the broader society, both of which have assumptions in common (1992, p. 458). However, the perspective of the subject must come only from those who are marginalized by the respective community (in this case, women).

Such an acquisition of knowledge increases objectivity in its properly operationalized manifestation: for, it advances research which serves to produce knowledge for women, who are marginalized. One tool of FST to establish a subject-object relationship that is aligned with feminist aims is to establish for the inquiring subject a bifurcated consciousness: a situated knowledge which women can gain from their social location which enables them to understand both their own condition and the perspective of those who marginalize them (Harding, 1990). Harding argues that bifurcated consciousness can break down the barriers between the experience women have of their own lives and the conceptual frameworks that fail to account for them accurately; for example, "looking at nature and social relations from the perspective of administrative 'men's work' can provide only partial and distorted understandings" (Harding, 1990, p. 92).

FST proponents, such as Sandra Harding, tend to view the scientific method, even via feminist empirical inquiry, as a gendered approach in the final analysis; hence, such a method, or any employment of a single method for that matter, cannot advance feminist goals sufficiently. Though FST proponents tend to agree in principle with several components of feminist empiricism, Harding argues that it is wrong to believe that simply "stricter adherence to the existing methodological norms of scientific inquiry" by the individual inquirer and her discourse with the broader scientific community can adequately address illegitimate gender bias; for, "Androcentric biases enter the research process particularly at the stage when scientific problems are identified and defined, but they also appear in the design of research and in the collection and interpretation of data" (Harding, 1990, p. 89). Harding believes that the contribution of FST helps address "the origin of scientific problems (of the context of discovery)" (1990, p. 93), which the scientific method on its own cannot do. Even reference to the historical record of how modern science was brought about by the bourgeois revolutions from 1400's-1600's or how the proletarian class struggles of the 19th century brought understanding of the effects of class struggles on concepts of nature and the dynamic of social relations does not exonerate / justify the scientific method. Further, the incorporation of concerns brought by the women's movement to bring about more opportunity for women to pursue feminist research did not, in the end, take to task the foundational elements of the scientific method itself (1990). The inclusion of FST holds accountable the relationship between the individual inquirer and the scientific community that the scientific method, on its own, creates and sustains. By drawing focus to the need for research to be guided by a women's perspective, FST "sets within larger social theory its explanation of the importance of the origin of scientific problems (of the context of discovery) for the eventual picture of science" (1990, p. 93). As a result, the inquiring subject is inquiring as

part of a marginalized group to advance aims that are derived from their social location. Such an approach too, of course, carries a political concern that is only addressed by feminist empiricists in an ad hoc manner (1990).

Harding proposes that principles of fairness, honesty and detachment would serve adequately as th**e** cognitive criteria for scientific inquiry that can operationalize objectivity and, thus, adequately address areas where feminist empiricism falls short. Detachment is not an impersonal approach, Harding insists, but the standpoint inquirer must distinguish her inquiry from assumptions which yield, what Thomas Haskell called, “spontaneous perceptions and convictions”, such as those shared by a scientific community or by dominant groups in a scientific social order (Harding, 1992, p. 571). This distinction and application of values used as feminist cognitive criteria to adequately correspond evidence to theory is, thus, the application of the subject’s privileged and developed situated knowledge that comes from her social location that is shared by women. Such an approach would enable objective knowledge to be attained: "a critical evaluation to determine which social situations tend to generate the most objective knowledge claims" (Harding, 1991, p. 142). Kristina Rolin refers to an illustrative study which examines how discrimination is perpetrated in subtle ways against female academics: ways which work to sustain systematic gender inequity in the academic arena. From the situated perspective of the female researchers, gender discrimination was traced in how it negatively affects the motivation and self-confidence of female academics. Rolin notes that reference to “subtle forms of discrimination” shows a choice of criteria within a “socially grounded perspective because the choice is motivated by their feminist values” (Rolin, 2006, p. 131). Such a choice is one that embraces cognitive criteria in inquiry as value-guided to enhance a marginalized perspective, not distortive bias.

Taking the FST perspective of requisite cognitive criteria for scientific inquiry, the subject-object relationship, the individual and the community, and the fact-value distinction, objectivity in FST is a means to bridge the values that inform the marginalized perspective of women and the general aims of epistemology for women: "The notion of objectivity is useful in providing a way to think about the gap we want between how any individual or group wants the world to be and how in fact it is" (Harding 1991, p. 161). For FST proponents like Harding and Wylie, the empiricist trust in the mediating power of the faculty of reason to reduce the number of various theories that can ostensibly justify discovery of a finding does not sufficiently account for the marginalized perspective of women. However, the FST position to abstract the marginalized experience of women into a set of criteria that transcends that experience is a trust in transposing experience through appeal to a transcendent set of cognitive criteria which, as such, is to account for the experience of all women, however diverse their social location.

In this way, the leading FST and feminist empiricist philosophers of science I have discussed appeal to the transcendent as justification for knowledge, just as Plato, St Augustine and Descartes in their belief in the necessary and Aristotle and St Thomas Aquinas in their belief in the contingent. However, while both historical sets of believers in the necessary and the contingent express appeal to reason as a means of acquiring knowledge through communing with or discerning the transcendent itself (as a realm that exists beyond the immediate world of change, such as Plato's immortal soul or the domain of Aristotle's immaterial prime mover), leading FST proponents (such as Harding and Wylie) and notable feminist empiricists (such as Anderson, Longino and Douglas) defer to the mechanism of reason as both an instrument and as a sufficiently autonomous transcending agent to create a set of principles. In this way, it is the transcending, hence, *contemporary scientific* attribute of reason which the latter subscribe to, not

the transcendent (hence, supernatural) characteristic of reason which has characterized much of Western history. In this conception of reason, the FST and feminist empiricist positions are more concerned with knowledge as the subject inquirer's adequate adherence to principles than her / his discernment of a supernatural realm. FST philosophers of science such as Harding and Wylie view this model of adherence to cognitive principles as an affirmation, not a negation of marginalized experience while the empiricists Longino, Anderson and Douglas believe that adherence to cognitive principles can account for feminist epistemic values if the cognitive / non-cognitive distinction is abandoned. Also applicable to note here regards the role of experience in epistemological inquiry which distinguishes contemporary leading voices in FST and feminist empiricism from the historical proponents of the pursuit of knowledge via belief in the necessary and the contingent: for the latter, the epistemological factor of experience was a factor that was ultimately traceable to the realm of the transcendent not as, for the former, a property / dimension that is attainable ultimately by human reason to account for through creation of epistemological principles.

Postmodern Input: Value-Based Objectivity Undermines Pluralism

In its religious roots, the divine endowment of reason in humankind functions as, what current educational scholars may call, a "value": an assumption that, in this case, enables the inquirer to make universal epistemological conclusions through the lens of immutability and change. In other words, values / assumptions do not negate, but offer a necessary reference point for principles and procedures of inquiry to achieve universal claims to epistemological inquiry. However, divine reason, as a value, precludes personal experience and, thus, does not require a uniformity of background assumptions (as would be had through accounting for similarities in personal experience). Leading postmodern feminist educational scholars point to this problem of

values as social location to attain epistemic privilege. Susan Hekman frames the primary concern thusly: if all knowledge is socially located, that women come from different standpoints, hence various realities, how can it be convincingly argued that marginalized standpoints have more epistemic import (Hekman, 1997)? If this question is not addressed adequately, two consequences ensue which endanger the plausibility of standpoint theory: its claims to universal truths and the “analytic force” of the central standpoint argument (Hekman, 1997, p 349). Such criticism, in turn, raises the problem of how FST would define the subject-object relationship if the experience of the subject inquirer could be universalized. Further, the fact-value distinction would need to be re-visited because the values that are chosen to inform scientific inquiry would need to be understood to plausibly meet the needs of women, as understood universally, in their marginalized social location.

The understanding of women as a marginalized group for FST is an understanding which can yield universal epistemological claims about the experience of women as a marginalized group. Hekman points out that even though Harding accepts the position that there are many standpoints that women view their experiences from, Harding insists that oppression can be measured with reference to degree and dynamic of marginalization and, thus, be used to assign which social locations are more objective than others ("a critical evaluation to determine which social situations tend to generate the most objective knowledge claims"), thereby providing how objective knowledge can be determined. Hekman criticizes this position, arguing that the reality of women’s lives is a social construct in itself, since it is constructed through the lens of FST: “The fact that it is closely tied to the social actors' own concepts and provides a counter to the hegemonic discourse of masculinist science makes it no less a discourse” (1997, p. 355). Further, Hekman contends that to submit that the social locations of women can be assessed as to their

respective levels of objectivity does not elude underlying standards that measure such levels: “more ‘objective’ research necessarily presupposes a shared discourse – a meta-narrative even – that establishes standards by which these judgments can be validated. Yet the centerpiece of Harding's critique of masculinist science is the denial of the possibility of such a metanarrative” (1997, p. 355). Hekman concludes that the following concerns need to be dealt with: 1) a conception of difference needs to be addressed by FST and 2) the challenge of relinquishing the uniform analytical standpoint of women in general as the single reference that is representative of all women needs to be addressed in light of the possibility of standpoint theory being reduced to a relativist, thus, ineffective theory (1997).

Hekman cites, among others, Nancy Hartsock’s attempt to address the above challenges. Hartsock argues for a unifying standard of knowledge as the only way to adequate meets feminist epistemological needs: that, without “a systematic understanding of the world, we will be unable to change it” (as cited by Hekman 1997, p. 350). Hartsock believes that this aim of a unified standard is justified because women have a unique marginalized standpoint which legitimizes their claims to truth-finding and a method with which to attain it (1997); such a method makes it possible for the subject inquirer to examine those institutions that affect the experience of daily life. Hekman points to two factors that Hartsock believes accounts for both the oppressor and the oppressed: 1) the observation that those with privilege deem their own version of reality more truthful than the version of reality held by the marginalized; 2) the view of reality reflected by the privileged contains obstructive bias whereas the view of reality from the marginalized corresponds more to reality, consisting of less obstructive bias. Only the marginalized can employ a more comprehensive rendering of the real relationship between the

privileged and the marginalized, as through object-relations theory which shows the difference between how men and women experience the world (1997).

Hekman clarifies that if the marginalized are to gain access to the “center”, the realm of which is occupied by the ruling class who foster and sustain oppression of women, difference and a universal understanding of the reality of women needs to be in place. She, then, argues that Hartsock does not show that the inherent difference in the variety of situated knowledges of women can be logically demonstrated to show the epistemic privilege of women. Hartsock, Hekman argues, should seek to help modify the goals of the feminist standpoint position instead of trying to reconcile the promotion of difference (both theoretically and practically) as a necessary claim to epistemic privilege with the rejection of postmodern defence of the irreducible reality of multiple standpoints (1997).

Hekman also disagrees with Harding’s FST position that the marginalized nature of women’s lives provide “objective location” for research to be initiated. Harding promotes what she calls "strong objectivity": a position of epistemic privilege for women which acknowledges the variegated social situatedness of women while, at the same time, calls for a standard that discerns those social situations which generally bring about “the most objective knowledge claims" (as cited by Hekman, 1997, p. 354). In other words, for Harding, there needs to be “an objective location -women's lives- for the place where research should begin” (1997, p. 354). It is FST that can accomplish this task because while they embrace relativism that has historical and cultural-sociological roots, it denies the validity of judgemental relativism or that of the epistemological variety (1997). In this way, “Strong Objectivity” would depart from the masculine idea of objectivity as matter of establishing “true beliefs” or knowledge that goes beyond historical context. Hekman’s counter-argument is that Harding’s assertion that such an

approach will lead to a more objective understanding of women's experience is not an argument that includes the necessary map on how to accomplish this. Referring to the reality of women's lives, in Hekman's view, is a socially constructed reference that counters the male-dominated discourse, but, as a discourse itself, weakens the legitimacy of the argument that such an approach can lead to the "strong objectivity" through women's epistemic privilege (1997, p. 355). Further, Hekman argues that Harding fails to qualify what would actually amount to "more objective claims" if there is no shared foundation of discourse (1997, p. 355). It cannot be assumed, Hekman maintains, that a claim can be deemed more plausible than another without a shared discourse that acts as its foundational reference (1997).

Donna Haraway offers FST adherents who subscribe to a belief in the objective ability of women's epistemic privilege a sobering assessment of this claim and argues that "gender, race and class cannot provide the basis for belief in 'essential unity' (Haraway, 1991, p. 6). There is nothing about being 'female' that naturally binds women. There is not even such a state as 'being' female which is itself a highly complex category constructed in contested sexual scientific discourses and other social practices" (1991, p. 6). However, Haraway supports the goal of forming coalitions, which emphasizes affinity as opposed to identity. This moves away from the goal of epistemic privilege as sought by FST towards, what Chela Sandoval calls, "oppositional consciousness"; oppositional consciousness is based on discerning "webs of power" (1991, p. 6). Coalitions are formed by members of groups who foster historical consciousness, challenge original identities ascribed to them (such as "Women of color") and employ a fully engaged political, concrete understanding of male- dominated areas of "Western" pastimes. Identities emerge of a post-modern variety, such as otherness, difference and specificity.

The critiques from these post-modern positions of Hekman and Haraway are a submission that not only is the value-free ideal deeply flawed, but that the very arguments which undermine this ideal also dim the prospect of establishing an adequate roadmap towards achieving scientific objectivity. Due to the lack of autonomous power of the faculty of reason within the scientist to mediate which values can / ought to be admitted to as cognitive values, she / he can no longer plausibly hope to achieve a comprehensive system of knowledge by establishing a universal set of cognitive criteria that accounts for the diversity and difference in social location; this includes criteria which can account for the supposed shared marginalized experience of women. The long-held belief in the scientist's appeal to rationality as its own transcending autonomous power is no longer tenable as a credible assumption for the philosopher of science. The religious roots of rationality as a means of comprehension towards a better understanding of a greater, transcendent reality, framed reason as a lens through which a particular world view of the necessary and the contingent could be discerned. The postmodern critiques Hekman and Haraway offer to the feminist standpoint and empiricist positions suggest a return to re-assess this framing by showing that rationality, via the establishing of cognitive principles of knowledge, cannot ultimately account for diversity and difference.

Further, Hekman and Haraway, in emphasizing the need for feminist philosophers of science to shift focus towards an epistemology that adequately embraces affinity and diversity, thereby rejecting objective cognitive criteria as the epistemological license of marginalized, are arguing in effect that diversity and difference of social location do not require objective, all-encompassing aims to be legitimized into knowledge that assists women towards emancipation; emphasis on affinity of epistemological aims emphasizes the assumption that values, expressed through social location, are themselves cognitively emancipatory tools that produce knowledge.

Chapter 4

Conclusions

The Consequences for Discourse on the Value-Free Ideal from the Apparent Gap Between the Historically-Rooted Belief in the Transcendent and the Contemporary Problem with the Transcending Power of Reason

Though there have been shifts in the philosophy of social science that diverge from the aim of objective knowledge (such as, among others, the efforts of post-structuralist and constructionist proponents), leading feminist philosophers of science view the problem of the value-free ideal and objectivity as one that needs to be adequately addressed to discern whether these aims are consistent with the aim of epistemological emancipation of women. The postmodern feminist Donna Haraway once asked

> "Is there a specifically feminist theory of knowledge growing today which is analogous in its implications to theories which are the heritage of Greek science and of the scientific revolution of the seventeenth century? Would a feminist epistemology informing scientific inquiry be a family member to existing theories of representation and philosophical realism? Or should feminists adopt a radical form of epistemology that denies the possibility of access to a real world and an objective standpoint? Would feminist standards of knowledge genuinely end the dilemma of the cleavage between subject and object or between non-invasive knowing and prediction and control? Does feminism offer insight into the connections between science and humanism? Do feminists have anything new to say about the vexed relations of knowledge and power? Would feminist authority and power to name give the world a new identity, a new story? Can feminists master science?" (Haraway 1981, p. 470).

I conclude that if social scientists are to continue apace and foster a conception of epistemology which advances the epistemological interests of women beyond serving as "a family member to existing theories of representation and philosophical realism", as Haraway put it (p. 470), the religious roots of the value-free ideal and objective knowledge need to be addressed. My comparison of religious roots of epistemological inquiry in educational scholarship to current discourse indicates that there are shared categories. Does this in itself determine that religious roots guide and, thus, ought to be given renewed, direct attention if the debate on the role of objectivity in educational scholarship is to advance? No it does not require such attention, but it does suggest, at the very least, that these shared categories of inquiry, the subject-object dichotomy, the cognitive / non-cognitive distinction, the fact-value distinction and the relationship between the individual and the community, deserve scrutiny regarding how the religious roots of current educational scholarship on factors of objectivity in epistemological inquiry are shared.

The listed factors I have indicated which characterize features of the problem of the value-free ideal and the attendant aim of achieving objective knowledge for leading educational scholars within social science can assist in a more comprehensive understanding of the problem if the tandem relationship between belief in discovery of the necessary and the contingent via the transcendent and the justification of this discovery through reason are recognized as foundational components of these factors. The four factors I have listed as issues manifest in the current debate on the problem of the value-free ideal and the ensuing problem of objective knowledge each contain an assumption of the foundational understanding of the universe, either as a necessary rational entity or as a creation that has a contingent existence. This conclusion I have reached implicitly addresses the question of whether leading educational scholars within social

science have adequately framed the problem of the value-free ideal and the aim of objective knowledge and, thus, accounted for it sufficiently. For, if the social scientist asks if there is an epistemology (such as feminist epistemology) which is comparable to theories that are indebted primarily to the scientific thought of ancient Greece and seventeenth century Western Europe, the problem of objectivity will depend on and, thus, be restricted to, a mistaken notion of reason as a purely secular scientific enterprise and the omission of the foundational religious narratives that lie at the heart of Western epistemological inquiry. Discourse on objectivity, then, will be less comprehensive as a result. The two foundational beliefs in a rational, immutable universe and a world that is contingently created subscribe to a conceptual marriage of discovery and justification that is based on reason as an instrument that is not distinguishable on its own, without the transcendent as the guiding force of discovery and, thus, invite incomprehensive scrutiny if not understood and assessed as such.

For, if the educational scholar within social science accepts that foundational beliefs in the transcendent significantly contribute to the four factors in leading educational discourse on the problem of objectivity, the nature of the problem shifts for the social scientist to bear the more existential weight of how social scientific epistemological aims and means are to be understood, since a contributing problem of objectivity for educational scholarship as a social science becomes how to account for the particularly significant contributions of its religious elements. Since epistemological aims serve to set the trajectory of how the subject inquirer is to arrive at knowledge, the educational scholar might come to consider the historical religious influences on Quine's "web of belief" and pursue whether it amounts to an epistemological aim which distinguishes between evidence and discovery that is borne from the failure to clarify the difference / similarity between the transcending power of reason in inquiry and the appeal to

reason as an autonomous, transcendent entity, thereby re-framing the instrument of reason as an appeal to itself as a transcendent substance. This would assist debate on the value-free ideal by putting into focus whether evidence and discovery in the web of belief is more an appeal to the transcendent and less the work of reason merely as a secular, scientific tool. Leading educational scholars will not get to the "root" problem of the value-free ideal and whether to abandon the aim of objectivity if reason is reduced to an obstructively biased, gendered view and not as a justification that is yet bound by belief in the transcendent; the feminist philosopher of science could then investigate the role that belief in the transcendent may have in how the contemporary scientist conducts research, including the possible foundational issue of how belief in the transcendent could amount to an obstructive, gendered epistemological pursuit.

What would be required for fruitful discourse on the roots of belief in the transcendent on understanding objectivity to be accounted for as purely scientific problems in educational scholarship? If the four factors (the subject-object dichotomy, the cognitive / non-cognitive and fact-value distinction, and the relationship between the individual and the community) are a primarily scientific matter, the foundational transcendent discovery of the universe and the attending rational articulation / expression that have largely underpinned these factors of inquiry (the belief in the immutable laws of a rational universe and the belief in a contingently created world), need to be adequately accounted for via each of these factors as foundations of their own.

However, looking to the beliefs of historically influential thinkers in the role of the transcendent in the current value-free ideal debate reveals a precedent of thought that is based on appeal to the transcendent that functions to enable the subject inquirer to discover and articulate a contingently created world or a universe that is rational. In the first, the strand of epistemological inquiry created through the foundational assumption of the universe as a

necessarily rational, immutable organism / mechanism that is rationally discernable through divine reason firmly established religious roots of the four factors that continue to be central in the debate over objectivity and how it ought to be understood in current educational scholarship. Plato's argument that appeal to supernatural divine illumination is required for knowledge to be justified relies on the concept of a priori investigation through appeal to innate ideas, which can be discovered through recollection. Faith in the immortal soul awakens the rational faculty of the mind to inquire a priori. True knowledge is framed from this understanding as distinct from true belief, since knowledge is true belief with an account: a claim that is backed by a rational explanation which can recall innate ideas. Recollection is to rationally recall the immutable through distinction from the mutable. Change, then, is deemed to be fleeting and, thus, less real since it is not accounted for by rational recollection, but by the senses. In other words, appeal to sense cannot, by its very nature, yield a rational account. Rational account yields true knowledge of a rational universe.

St Augustine established a Christianized system of epistemological inquiry by adopting and modifying much of Plato's belief in the immutable nature of true knowledge, discernable by divine illumination. As faith in the immortal soul provided for Plato a foundation of inquiry that brought about the process of the soul's recovery through a priori reasoning, faith in God provided, for Augustine, a foundation of inquiry which enabled the mutable soul to partake in the divine to inquire and gain understanding of God's immutable truth. The senses, as deceptive impulses of change, led the inquirer astray from an unchanging God. A priori reasoning would return the mutable soul to God and render the senses their subordinate place for the true Christian believer.

Descartes' belief in knowledge of God as attainable through pure reason positioned humankind as less of an agent of discernment of the immutable truth of God or of the immortal soul, and more as a possible approximation of God. Descartes' belief that a human being's very existence was to be found through a priori reasoning no doubt augmented the sense of autonomous human power, hence, agency, and belief in the faculty of reason to determine the unchanging nature of all things, including the existence of rational humankind. The rational faculty of humankind, then, becomes the foundation for knowledge and for existence itself, a verification of being. If Descartes credited his own mind with discovering the rational foundation for inquiry, how should this be understood to be not only a religious root of current educational scholarship on factors of objectivity, but a major contributor? Through Descartes' view of the universe as an immutably necessary rational mechanism, the act of reason was knowledge of God. For Descartes, human autonomy and divine authorship were not one and the same thing; rather, the agency of purely rational inquiry was an exercise in one knowing God as an intermediary between God (as God's self) and nothingness. With the rational mind as the determining faculty that discerned the divine author of the universe and nothingness, Descartes' religious belief brought to the forefront the power of reason as a source of religion, not as a negation of it.

These foundational views of the universe as an immutable, rationally discernable source of inquiry yielded religious roots that bear on the four factors in current educational scholarship (the subject / object dichotomy, the cognitive / non-cognitive and fact-value distinction, and the relationship between the individual inquirer and the broader community) on how objectivity ought to be understood. The inquiring subject, of Plato and Augustine, as a human being with a rational faculty who could discern the rational from the sensible by abstracting shared

characteristics of particular objects of inquiry, became, in Descartes' view, a rational agent within a rational universe; hence, both the subject and the object of inquiry were conceptual entities, with the subject's rational acts of inquiry as autonomous knowledge of God. Put another way, one knows God if she / he understands inquiry as an enterprise entirely within the realm of pure reason.

The cognitive / non-cognitive distinction was rooted as an adequate means to establish the aim of knowledge as distinct from inadequate means that serve only to achieve true belief. Adequate means of knowledge consist of the sufficiently cognitive: the rational discernment of the immutable from the inadequately, non-cognitive, the less real discernment of the susceptibility of the senses to change. Turning to the immortal soul (Plato) / God (Augustine) / conviction of pure reason (Descartes) allowed the justifying power of reason to determine, hence, map the landscape of inquiry itself and, thus, monopolize over the other faculties (such as the faculty of sense), rendering them as either obstacles and / or stages to achieve comprehensive knowledge. The human appeal to the divine to access and apply the divine within him /her was deemed to be the rational faculty and, thus, with divine power of discernment and autonomy, rendered the cognitive / non-cognitive distinction as a concern of the extent that humankind could discern the divine. Reason, particular to humankind, was the divine agent of knowledge. I will raise this issue with regards to how the leading scholars I have cited address or these religious roots of the cognitive / non-cognitive distinction and whether this manner of address hinders or helps the discourse on how objectivity ought to be understood in educational scholarship.

The fact-value distinction through the foundational lens of the necessary as understood by Plato, Augustine and Descartes is rooted in a current scholarly understanding of the fact-value

relationship in that these influential thinkers believed that there was a distinction to be made between how facts were to be determined (divine reason) and a divine source (the immortal soul, God, or conviction) that initiates the process. For these thinkers, this distinction is a nevertheless complementary relationship that results in the shared aim (knowledge of the divine) to establish appropriate means (pure reason) for epistemological inquiry. In this way, the value of the divine ensures the monopolizing power of reason to determine facts. Current educational scholars, such as Elizabeth Anderson, also share a version of the fact-value distinction, viewing certain values as potential contributors to establishing facts (such as the thick evaluative concept of trauma) and other values as potential hindrances (emotional detachment). Thus, they do not see values necessarily as a legitimating reference for reason, but rather as contributing factors to inquiry that reason can ultimately stand outside of, as it were, and accord them the correct level of validity. Once I have summarized the views of leading educational scholars I have cited, I will return to this fact-value distinction and address how their confidence in reason, without the value of reference to external authority, addresses the problem of values as background assumptions.

The religious root of the fourth factor as shared by Plato, Augustine and Descartes through their foundational belief in the necessary obviously afforded a place for the individual inquirer to exercise the power of reason through its connection to the divine within themselves, so that knowledge could be gained. However, even though the responsibility of this acquirable knowledge rested primarily on the shoulders of the individual, such an acquisition was not to be necessarily unaccountable to those in positions of authority. Both Plato and Augustine were very clear that only a select group of people (those who best discern the realm of the immortal soul and those who are Catholic Church ministers of the baptism of Jesus Christ, respectively), those who have institutional authority of the state and / or the church, are the final judges of the

individual inquirer. No matter how well-attuned to the divine an individual is, there will always be another or, rather, another group of people who have natural authority over him / her. Descartes, however, did not subscribe to this belief and, instead, believed that human beings were a realizable approximation of rational discernment both in active will to rational autonomy and passive adherence to rational cognitive principles. Despite Descartes' acknowledgement that the individual should seek to accommodate the interests of the local and broader community because the individual cannot survive on her / his own, the act of knowledge of God through reason was an individual pursuit, manifested in this epistemological governance of and by the rational self. Nevertheless, the religious authority of self-governance through knowledge of God does not necessarily negate the shared epistemological interests that the individual may have with entities of institutional authority (such as the state and the university) as guardians and enablers of adherence to rational cognitive principles. Thus, for these influential believers in the divine inquiry of the necessary, even though through the one divine faculty, reason, epistemological inquiry is largely a matter of individual faith and conviction, corresponding institutional authorities must or, at least, may accompany what amounts to legitimate knowledge.

In the second, the appeal to the transcendent that the subject inquirer makes is the teleological discovery of the creation of a contingent world that, at its root, is created by an unmoved mover. Articulating his transcendent teleological discovery of a contingently created world, Aristotle believed that it is nature (the physical world) and how motion occurs within it that can yield a viable epistemological system that corresponds to this discovery. And if the inquirer is to understand motion, she / he must account for causation through observation via the senses. An essential component of the final cause (of the four causes) of Aristotle's accounting of causation is of a teleological nature: not only do all actions take place in pursuit of a goal, but

the inquirer can discern what this goal is. When change occurs, the inquirer observes to conclude what is good, in the sense of what is better, for the object to bring about this change. In other words, actions occur in nature for the sake of something. However, Aristotle believed that the argument for a first cause results in an infinite regress and is, thus, a fallacious argument; he argued instead that at the source of all motion is an unmoved mover, for this is to understand causation. This unmoved mover is immaterial and brings about motion. And, it is this immaterial unmoved mover that yields purpose of all things. To not refer to this foundational belief in the contingently created world as religious would be to assert that such a belief could only become "religious" through modification (as through Thomas Aquinas); a mere assertion would simply not be sufficient. Indeed, one could reference the Catholic Church's allusions in the thirteenth century to Aristotle's writings as heretical and its subsequent banning of them from being taught at the University of Paris (Walker 1985) to help show that Aristotle's beliefs in the transcendent contained beliefs of a religious nature, since this ban included allusion to theistic beliefs that were not concordant with those of the Catholic Church ("Selections," n.d.).

Second, for Aristotle, this contingently created world can be articulated / expressed by divine reason (this belief is, obviously, a belief in the divine but it would, indeed, be a strange belief if only the faculty within a certain species was divine and did not include beholding the divine being, or substance, that brought about the creation of world), a faculty that is unique to humankind (as opposed to the element of nutrition and growth which is endowed to plants, trees, etc, and the element of perception which is endowed to animals). Though Aristotle does not say whether reason is divine *because* it is peculiar to humankind or due to his assertion that rationality in itself, peculiar to humankind or not, is a divine element, the scholarly reader is left to make this choice. Such a choice, however, yields space for conflation, thereby yielding a third,

more profound and, thus, consequential option: that reason is divine because of its very nature, a faculty that is to be found only in its peculiarity to humankind. Moreover, Aristotle believed in the proposition that if reason is divine then one who lives her / his life in adherence to it must also have a divine life: an active life of the element that has a rational principle (Ross, 1999, p. 174-5). Put another way, a life of adherence to the divine which is to be found within a particular faculty. Discovery via the belief in the transcendent, the teleological prime mover that animates contingency, is articulated by divine reason in Aristotle.

As a basis for Aquinas' epistemological system, Aristotle's belief in a transcendent prime mover of a contingently created world would encourage Aquinas to modify this belief into an epistemological system in which Aristotle's prime mover would become the Christian God who was not only the transcendent prime mover of contingent nature, but its transcendent designer as well. And since knowledge of God was available to human beings because they can discover the idea of God through their ability to determine the cause from understanding and articulating the effect(s), understanding God was to ascertain Him as the prime mover (ultimate cause) and designer (creator) of His "effects". This conception of epistemological inquiry as a discovery of God as prime mover / designer and an investigation that yields articulation / expression of discerning God's effects corresponds to the aim of understanding the Christian God as the creator of a contingent world.

In regards to the role of divinely endowed reason in a contingently created world, Aquinas believed, similarly to Aristotle, that human beings are intelligent and the other, natural bodies, are non-intelligent. To investigate the nature of God as the transcendent unmoved mover, the unique, divine endowment of reason to intelligent beings would be employed; but inquiring into God as designer included the necessary divine endowment of faith. The faculty of endowed

reason in humankind can “trace” the likeness of God through discerning God’s effects in nature, but this approach is limited to cause and effect which does not account for the “substance itself of God”; hence, for epistemological inquiry to be complete, reason must be “adapted to the knowledge of the truth of faith, which can be known in the highest degree only by those who see the divine substance… (Aquinas, 1924, ChVIII).

The transcendent discovery and articulation / expression of contingency, as illustrated through Aristotle and Aquinas thus shows their influential beliefs via factors that are shared in current discourse amongst leading educational scholars within social science on the value-free ideal and the attendant problem of the achievability of objectivity: the subject-object dichotomy, the cognitive / non-cognitive & fact-value distinction, and the relationship between the individual and the /community. Each factor in epistemological inquiry is enabled by endowed divine reason to discern the “effects” of a transcendent God (Aquinas) or the prime mover (Aristotle) of the contingently created universe.

For Aristotle, the cognitive / non-cognitive distinction is made as a distinction between the rational (which embodies the cognitive criteria) and the life of nutrition and growth and the life of perception (which embodies the non-cognitive). Similarly, Aquinas sees this distinction as one between intelligent and non-intelligent beings. For Aquinas, the fact-value distinction could be construed as a mutually dependent relationship between faith in the transcendent (God) and reason (as a divine endowment, hence, extension of the transcendent). As recent leading scholars largely have taken the position that values inform fact (such as Kuhn’s influential theory of incommensurability), so faith in the transcendent as an act of discovery for Aquinas informs reason as the articulation / expression via investigation in that the former, as mentioned, adapts divine reason to its proper place of inquiry into God’s effects of nature. Though Aristotle did not

overtly distinguish faith and reason, his belief in the power of a transcendent prime mover as a foundational assumption to address the problem of an infinite regress of causation within nature, articulates the similar position that though divine reason affords facts that correspond to nature, appeal to the transcendent is a necessary, linking component of inquiry.

As regards Aristotle's conception of the relationship between the individual and the community in accounting for plausible epistemological inquiry, divine reason attained by the human individual, which ultimately comes from the divine prime mover, precludes the accountability of his / her inquiry to the broader community on a purely epistemological level, despite the fact that human beings, by nature, are bound to have common interests and desire to cohabitate. However, it is the aristocratic state that is to determine the social function of human beings within its borders. Hence, as a concern of authority over plausibility of inquiry, it is the determination of the state, as the ultimate authority, to decide whether the individual inquirer has made acceptable epistemological inquiry.

For Aquinas, the relationship between the individual and the broader community in accounting for plausible epistemological inquiry, is one in which the validity of the individual's manner of inquiry is accountable to the ecclesiastical authority of the Catholic Christian church. Whether an individual inquirer's epistemological method is acceptable is to be decided by this authority based on whether such an approach adequately contributes to the unity of the Christian Church, as a force against diversity of opinion deemed by the Church as divergent from Ecclesiastical Church doctrine. Epistemological inquiry, then, is a matter understood and prescribed by the authority of the Church. However, Aquinas' belief in the individual agency of the inquirer affords her / him a place in the pursuit to realize what Truth is and that the authority of the church can be autonomously learned.

Max Weber, a major contributor to the foundational principles of the subject / object dichotomy, the cognitive /non-cognitive and fact / value distinction and the relationship between the individual and the community in social scientific epistemological inquiry once wrote “That science today is irreligious no one will doubt in his innermost being, even if he will not admit it to himself. Redemption from the rationalism and intellectualism of science is the fundamental presupposition of living in union with the divine” (Weber, 1919, p. 9). To point out that Weber’s conception of religion as a union with the divine that is characterized by redemption from the rationalism and intellectualism of science is instructive as an illustration of how leading educational scholars in general have (or have not) acknowledged religious roots in epistemological inquiry. It not only lies in the mistaken assumption that there is a clear distinction between the routes taken between religion and science, but how, as a consequence, religious roots remain unaccounted for to the degree that would otherwise result in a discourse on objectivity that lays bare the outstanding underlying issues which have not abated.

Transcendent Power of Instrumental Reason for the Feminist Empiricist: An Appeal to the Transcendent to Address the Value-Free Ideal?

Taking into account how leading feminist empiricist thinkers Elizabeth Anderson, Heather Douglas, and Helen Longino have understood the four factors in how the value-free ideal and objectivity ought to be understood, the primary issue that underpins is the problem of giving cognitive (epistemic) value to background assumptions that are still discernable by instrumental reason. In other words, the case for the power of the inquirer (and / or the scientific community) to harness and accurately assign the nature and influence of values through instrumental reason needs to be made convincingly. Feminist empiricists generally argue that the nature of the traditional dichotomous relationship between the subject inquirer and the object of

her / his inquiry is one of a contrasting, metaphysical nature, which prevents the inquirer from making comprehensive conclusions that adequately represent the female gendered perspective. This is due to male gender-based pretense to employing cognitive criteria that are purely rational, which prevents the intrusion of inherently obstructive background assumptions, such as emotions. Put another way, what qualifies as legitimate cognitive criteria and how cognitive criteria ought to be admissible is the major concern. If values from the female perspective are admitted as valid cognitive criteria, the aims of inquiry necessarily influence outcomes, but not unduly, according to the above leading feminist empiricists. First, as argued by Longino, incorporation of feminist values (such as mutual interaction and emotions), if admitted as cognitive criteria, can serve to mediate between how data and theory are explained, since data is explained in a descriptive manner and theory is explained causally (the former cannot sufficiently substantiate the latter absent such a mediating factor). Such an admission would assist in dissolving the false cognitive / non-cognitive dichotomy.

Second, as Elizabeth Anderson takes to task proponents of the traditional belief that employing cognitive criteria according to reason alone ostensibly prevents the inquirer from prejudicing the results before the investigation has even begun. Anderson argues that the subject can employ reason as a purely instrumental tool while, at the same time, allowing background assumptions to guide inquiry. How? Anderson argues that if the subject submits values as evidence, this will not necessarily prejudice the outcome: that values guide aims of inquiry adds to their comprehensiveness and does not unduly affects the inquirer's employment of instrumental reason in the process. Rather, Anderson submits that the inquirer can employ instrumental reason to utilize values in inquiry to the sufficient degree that they can be accepted as scientific evidence. Anderson believes that moral values (such as believing divorce is "good"

or “bad”) do, indeed, influence outcomes. However, if the subject inquirer includes test subjects who hold diverse moral views of the object of inquiry, such as the effects of divorce, the inquirer will have held a more balanced inquiry which consists of participants who hold both positive and negative values. Even if the inquirer uses “thick” evaluative terms such as, in this case, “trauma” to gauge the effects of divorce, this may yield evidence, even if it is negative; this is because, for Anderson, such a finding is not guaranteed.

Anderson’s argument fails to address how the inquirer can restrict the influence of reason to a purely instrumental role and background assumptions to serve exclusively as a guide of inquiry. First, the use of “thick” evaluative concepts may not guarantee a corresponding finding of the effects of divorce as negative (if the thick evaluative concept used was negative), but it will make it probable. So, if the finding is, indeed, negative, the capacity of the inquirer to convince her scientific peers that it was an objective study is highly unlikely. Second, the inquirer’s choice to assess participants whose values differ significantly from one another is not necessarily an argument for the human ability to adequately channel their faculty of reason into a purely instrumental tool.

As I have discussed in reference to the influential thinkers of the belief in the necessary and the contingent regarding the role of the transcendent in the human inquirer’s ability to reason, the power of reason within the human inquirer is enabled by the transcendent (thus, for Aristotle, reason is even referred to as having a “divine” characteristic). The enabling authority of appeal to the transcendent is, to a degree, an appeal to an authority greater than the finite individual that brings about the divine internal ability within the human inquirer to employ reason as against the influence of other possible factors (such as nutritional necessity via Aquinas or sense perception via Plato, Descartes). Reason of its own autonomy was not plausible (even

for Descartes) because a foundational purpose (aim) that mapped nature and the universe was necessary for a justified employment of the rational faculty in human epistemological inquiry. Reason to discern the immutable of the immortal soul or to understand "God's effects" gave rationality in humankind the ultimate background assumption so as to postulate reason in humankind as distinctly, though dependently, capable of understanding our object of inquiry. Hence, for these thinkers, reason was enabled through the prism of the transcendent which yielded an epistemological prism, through which all other influences could be monopolized under the employment of the aims and means of inquiry, but not self-willed to become its own monitor, a self-appointed arbiter.

Leading feminist empiricists, therefore, have failed to demonstrate how instrumental reason in humankind can plausibly function in a bidirectional (hence, discernably balanced?) relationship with background assumptions or to what degree reason can be subordinated yet still provide an instrumental role in the mediating role values can play between the descriptive nature of data collection and the causal nature of the theoretical. Put another way, appeal to the transcendent, as expressed by influential believers in the necessary and the contingent, yielded an instrumental reason that was as an *articulation* of that appeal. This traditional conception remains misconstrued by the feminist empiricists Longino, Nelson and Douglas, who seem to continue to advance Weber's assertion that instrumental reason is accountable simply to "values", as though "values" could be attributable to any cultural background, no longer accountable to the historically rooted foundational belief in reason as a means of discovery through appeal to the transcendent. Weber advocated

> …those arguments which appeal to our capacity and need for thought ordering of empirical reality in a manner which lays claim to validity as empirical truth. This

> proposition remains correct, despite, as we shall see, the fact that those highest "values" underlying the practical interest are and always will be decisively significant in determining the focus of attention of thinking activity in the sphere of the cultural sciences (Weber, p. 11, 1949)"

How does "need" not render the claim to "capacity" as a mere assertion? Further, how would "capacity" not be derived from "need" in some way? As with virtually all of the thinkers I cited in the first chapter, the broader community (the church / state) is presented as a corresponding transcendent instrument of recourse that ultimately holds the subject inquirer accountable if she / he fails in her individual pursuit of the transcendent. If background assumptions are now to be adopted into how the aims of inquiry are to be decided, the background assumption of the divine in reason as an expression of discovery via the transcendent must be accounted for if the inquirer is to perform the seemingly impossible task of employing reason both as a mediator and justifier of values, such as emotions and relationality. Indeed, this issue prompts the question of whether endowing the subject inquirer's faculty of reason with this power of authority is not an act that actually *expands* the power of rationality into the realm of discovery?

In other words, to adopt the dominance of the male-gendered belief that reason can yet serve in an exclusively instrumental form is to deny its role as a background assumption if appeal to the transcendent as an end of discovery is not accounted for. Indeed, if we compare, say, the cognitive value of relationality, a value that Longino argues is one that advances the cognitive interests of women, to the historically influential belief in instrumental reason as a tool of discerning (hence, *arriving at*) the necessary and the contingent, is the onus not on the empiricist to substantiate how the subject inquirer can autonomously regulate and, thus, alternate her rationality between functioning as a mediating power and an instrument? Indeed, this a reminder

of Descartes' autonomous will to reason as knowledge of God because it blurs the distinction between the human subject inquirer and the autonomy of her agency that accords the power of demarcation between discovery and justification.

However, it is precisely the efforts of leading feminist empiricists to upgrade the role of ostensibly non-cognitive values, such as mutual interaction, to becoming cognitive values that have advanced discourse on how educational scholars as social scientists ought to understand the value-free ideal and the aim of objectivity. This major step is an advancement towards understanding both religious roots and the nature of religion in inquiry in general because they argue for the admission of values into inquiry, thus, raising the question of what should qualify as an epistemic value and how values are to relate to instrumental reason in epistemological inquiry. If we refer back to Plato's influential rendering of the fact-value distinction, we can see that it is a distinction that is made between product (fact) and source (value), creating an inextricable linkage and dependence between them in epistemological inquiry. Plato's view of recollection of innate ideas through reason towards the immortal soul (or Augustine's view of the mutable soul turning to the immutable universe of God, Descartes' knowledge of God through the act of reason) can, indeed, be construed as a value, a background assumption, which determines the aims of the inquirer to arrive at facts (knowledge). In other words, the application of instrumental reasoning itself, which remains the very axiom of the overall cognitive means of inquiry for empiricists generally, is the operating manifestation of a background assumption, which, as such, must ultimately guide the aims of inquiry too. Plato's belief in rationality as an instrument to achieve the aim of returning to the immortal soul is not incidental; a metaphysical universe of divinely abstract discernment cannot easily be replaced by sub-values within this supreme value of reason.

This reference to reason as a root value of the necessary (as espoused by the influential thinkers Plato, Augustine and Descartes) is to suggest that, if the nature of what amounts to an admissible background assumption as a cognitive criterion and how it relates to instrumental reason are to be pursued, educational scholars should not approach the epistemic value of reason as an exclusively empirical tool, since the religious roots of reason as an epistemic value of the necessary are not, in the least, extraneous to the concerns of the empiricist. If empiricist educational scholars choose to explore reason as an epistemic value in empirical inquiry, the religious roots would appear directly and exclusively to epistemological inquiry as an empirical process, thereby tracing its roots via influential, empirically-based thinkers such as Aquinas and Aristotle. The embrace of change (motion) as a fundamental feature of the contingent effects of divine authorship and how reason in humankind, connected to this authorship by its divine nature would contribute to linking what has and what ought to amount to cognitive values in recent empirical thought with religious roots of empirical inquiry. What would be most productive, however, in my view, is an investigation into the dual tracks of evaluative divine reason, since reason as a rational force of the divine is shared between the religious narratives of the necessary and the contingent; discerning the convergent and divergent respective universes of these narratives would help bring about deep, foundational questions of the shared religious roots, hence shared epistemic value, of reason between the belief in necessity and contingency.

Standpoint Theory: Is the Transcending Power of Social Location an advance in Proximity to Discourse on Appeal to the Transcendent in Scientific Inquiry?

A primary concern of feminist standpoint theorists is that the empiricist, even feminist empiricist approach, to epistemological inquiry mistakenly relies too heavily on the scientific method to adequately take into account and advance the cognitive interests of feminist

epistemological inquiry; the conception of objectivity as a primarily intersubjective, discursive interaction between scientists is not sufficient in addressing obstructive gender bias. As Sandra Harding argues, only an "operationalized" objectivity can articulate feminist cognitive aims in a way which can expose the gender bias that cultural values and interests of a community foster. Through the lens of the four contributing factors to how standpoint theorists understand objectivity, the bifurcated perspective of the marginalized female social location must function as the operative value of inquiry, through which is manifested both the aims and means of epistemological inquiry.

The problem of enabling a system of inquiry to provide an objective perspective which transcends the individual nature of inquiry, thereby accounting for all pursuers of scientific knowledge, is a concern of FST proponents that is traceable to religious foundations, as espoused by the thinkers I have cited, specifically to the appeal to the transcendent in the relationship between discovery and justification. In like manner to these thinkers, for FST proponents, justification serves as the articulation of discovery, to expand understanding of the latter; justification does not function as a separate entity that is distinct from it to the degree that it can / ought to serve as an autonomous mediator. As such, epistemological inquiry is not a matter of fine-tuning reason as an autonomous means by modifying cognitive criteria (as some feminist empiricists seek to achieve), but of establishing a world view of discovery that can set aims of inquiry from within the individual / group (the marginalized woman's experience) by extending to a source of justification (bifurcation) that charts the marginalized woman's cognitive interests from this discovery. In other words, FST proponents cognizantly bridge the relationship between discovery and justification by undermining the power of the inquirer's faculty of reason in its dual role as instrument and mediator (according to which values are to count for their epistemic

value) to the marginalized cognitive interests of women; discovery of the marginalized perspective does not yield parity to the mediating role of reason (as espoused by empiricists). Instead, justification (bifurcation) becomes the advancement of cognitive interests discerned through discovery (the experience of the marginalized woman).

How, then, does the transcendent factor in to this relationship between discovery and justification in FST? First, the woman's immediate discovery through experience of her marginalization, the experience of a reality based on knowledge constructed by roots of male gender bias (such as the conception of knowledge as a value-free enterprise), directs her, as the object of marginalization (hence, potential epistemological subject inquirer), to discern the source / agent of that marginalization and her relationship to it. Her active pursuit to graduate this discovery through experience towards epistemological justification is achievable through her ability of bifurcation: experiencing and, thus, potentially accounting for both her own perspective and that of the oppressor. Bifurcation, then, serves a transcendent purpose as an external authority of discovery by offering an account that transcends the marginalized woman's own private experience; as an account of two perspectives by one party (the potential subject inquirer), bifurcation expresses transcendent experience that accounts for the discovery component of epistemological inquiry.

Bifurcation also serves as a means of justification that can advance discovery through experience to cognitive principle. FST proponents obviously do not use overt reference to the transcendent directly as an immortal realm or monotheistic entity beyond time and space as either, say, Augustine or Aquinas do. However, the subject inquirer's appeal to bifurcation as a transcendent source of experience does not remain as such, for this would yield a pluralistic epistemology that FST proponents do not afford. Instead, the transcendent quality of bifurcation

allows for the marginalized subject inquirer to transpose this experience into a transcendent set of principles that accounts for the shared experience of all women. In this way, the possibility of bifurcation for women as a marginalized group serves a transcendent function in two ways: to articulate this unique experience and as a graduated means of assembling a set of cognitive criteria, thereby augmenting experience to cognitive principles. By advancing this ability from the discovery realm of experience to the justifying realm of principle, the FST proponent seeks to legitimize bifurcation as a justifying tool towards objective knowledge; for, as Harding argues, FST proponents seek out "a critical evaluation to determine which social situations tend to generate the most objective knowledge claims" (Harding, 1991, p. 142)).

The aim of FST proponents to operationalize the marginalized experience by attaining objective knowledge claims attempts to position values as both descriptive and normative. This attempt aims to augment further the role of marginalized experience in epistemological inquiry, but the appeal to the transcendent as an abstract criterion to account for all marginalized experience hinders the efforts of FST proponents to clarify how the transcendent ought to be understood in this process. To appeal to both tracks, appeal to abstract criteria and shared experience risks one track yielding to the other. This dilemma recalls again the poet William Blake's concerns about the appeal of the transcendent as laws of knowledge rather than as a source of intellectual emancipation: how abstracted references of criteria can become the focus of knowledge acquisition, thereby rendering experience secondary in importance. And for him, experience must be enhanced through the transcendent, not abstracted, if the intellect is to flourish:

> Men are admitted into heaven not because they have curbed and governed their passions or have no passions, but because they have cultivated their understandings. The

> treasures of heaven are not negations of passion, but realities of intellect, from which all the passions emanate uncurbed in their eternal glory (Erdman, p. 564, 1988)

Do epistemological aims as filtered by cognitive principles abstracted from experience accurately correspond to the marginalized experience? Indeed, are epistemological aims of objectivity drawn more from mapping cognitive principles than from what the marginalized experience warrants? If so, might *aims of objectivity* be the primary guide to knowledge, not necessarily the experience of being marginalized? Further, are objective criteria essential to the overall aim of women to be emancipated? To recall Hekman citing Harstok's fear that without "a systematic understanding of the world, we will be unable to change it" (1997, p. 350)…for, if there are multiple feminist standpoints, then there must be multiple truths and multiple realities" (1997, p. 351). Changing the world for the marginalized woman is the end and objectivity is the means. For Blake, this was the problem of the transcendent: as an emancipative source of intellect via the experience of the imagination or a source of intellectual subjugation of experience via appeal to abstract laws. The woman's experience of marginalization and tool of bifurcation to graduate this experience towards objective knowledge, then, are features of the epistemological components of discovery and justification that appeal to the transcendent.

If the overall epistemological aim for FST proponents is the emancipation of women, looking to the influential proponents of appeal to the transcendent in the necessary and the contingent suggests that the task of establishing a set of cognitive criteria that is to outline the epistemological interests of the marginalized woman based on shared experience of social location articulates the limits of the transcendent as an abstract tool of justification that results in an unresolvable competition with, not articulation / expression of discovery. To appeal to the transcendent as an external authority of bifurcation and shared social location as a set of

cognitive criteria in order to advance objectivity derails the aim of advancing the cognitive interests of women because, through such a process, the aim of emancipation risks being replaced by the aim of objectivity; women who seek to advance their epistemological goals may find that the cognitive principles FST scholars arrive at may not necessarily correspond to their unique experiences.

The influential forebears of the necessary and the contingent that I have discussed submit that appeal to the transcendent is, ultimately, a construction of epistemological inquiry that positions discovery as an articulation of justification, thereby achieving the broader aim of affirmation of appeal to the transcendent. Through the affirmative nature of this epistemological conception, reason would emanate as an instrument of the transcendent, not a measure of the transcendent (hence, a sufficiently autonomous transcending faculty). The transcendent, as an experience that the subject inquirer can employ to account for another perspective (as bifurcation does for the marginalized woman), thus surpassing the individual's private account can, however, serve in the same way as it has for the influential believers in the necessary and the contingent: instead of serving as an autonomous tool of justification (so as to attain objectivity), the transcendent can be employed by FST proponents as a tool of discovery and articulation for women to build coalitions to advance their epistemological interests. In this manner, the aim of emphasizing affinity, as Donna Haraway suggests (Haraway, 1991) would be concordant; the subject inquirer's marginalized experience can become a more correspondent epistemological tool by returning the transcendent to its rooted function as a tool of discovery.

However, unlike the thinkers I have cited, who placed their emphasis on reason as an articulation / account of the transcendent immortal soul or prime mover or God, the marginalized experience via bifurcation can serve as the transcendent tool that articulates the marginalized

experience. Such an approach would emphasize coalition, not objectivity, as the primary aim of epistemological pursuit by offering a counter-narrative to the position of empiricists post-Weber that the "need and capacity" of humankind to "[order] empirical reality in a manner…lays claims to validity as empirical truth" (1949, p. 58). As a means of advancing affinity and coalition (as proposed by Haraway) of the marginalized experience of women, feminist epistemologists can put emphasis on *account* from a bifurcated transcendent perspective rather than on the ever elusive search to appeal to the transcendent as a mediating mechanism of proof.

Though FST proponents would disagree with the influential believers in the necessary and the contingent regarding the faculty of reason in humankind being endowed with the divine in connection to the teleological and the immutable, they might agree on a foundational level that the pursuit of knowledge via transcendent account is more plausible to the woman in her marginalized experience than through transcending reason itself as the primary epistemological authority to mediate experience. Reason, as the exclusive transcending agent, may account less for the marginalized experience than it marginalizes experience itself. As Blake argued, "The Bounded is loathed by its possessor. The same dull round, even of a Universe, would soon become a Mill with complicated wheels" (Erdman, 1988, p. 2)). The subject inquirer's appeal to the transcendent itself, however, undermines her / his receptivity to the usurping power of reason as the principal power to account for experience and, instead, avails the epistemological pursuit of enhancing experience, such as Blake's appeal to the transcendent through appeal to the human imagination. The human imagination, for Blake, is an appeal to the transcendent of human experience, as he articulates in the Marriage of Heaven and Hell: "How do you know but ev'ry Bird that cuts the airy way, Is an immense World of Delight, clos'd by your senses five?" (Erdman 1988, p. 35).

Indeed, if experience is to be the primary source of epistemological emancipation for FST proponents, appeal to the transcendent as opposed to attempting to transcend experience via one faculty (in this case, reason) may yet enhance experience and, thus, build emancipative knowledge. Discussion on the role that the subject inquirer's appeal to the transcendent ought to play in epistemological pursuits within social science at the same time opens the door for further discussion on the religious nature of the transcendent within social scientific conceptions of how epistemology ought to be understood, specifically, how reference to the transcendent in the scientific method (such as how cognitive criteria are derived from experience) approximates religious practice. Comprehensive religious practice shifts in focus from adherence to abstract principles (such as the *Code of Canon Law* of the Catholic Church) towards deference to experience (such as the visions of those proclaimed Saints in the Catholic Church) as axioms of discovery and justification, just as the debate within social science over whether objective cognitive criteria can adequately account for the diverse experiences of marginalized women. Further, reason as justification does not shield the empiricist from the charge that, ultimately, rationality is not only a "slave of the passions", but serves as articulation / account of discovery. Indeed, to return to Milton, how would *Paradise Lost* be less of "Justifying the Ways of God to Men" (as a defense of reason, no less) than the empiricist's account of 'proving' the effects of divorce on women? Without consideration of these religious roots of the value-free ideal and objective knowledge in general, the aim of arriving at an epistemology that reflects the marginalized interests of women will not be realized, as the significance and role of the transcendent in social scientific inquiry will remain elusive.

With such a consideration, however, the separation and hierarchical implementation of reason as an ultimately independent mediator over all other possible epistemological contributors

may collapse as a necessary condition for the attainment of scientific knowledge and, as a result, yield not only an epistemology that adequately reflects the interests of women, but a greater, pluralistic conceptualization of epistemology which affords diverse approaches, such as those that originate in the Far East; for example, adherents to the traditional Chinese belief in the life force / energy of Qi submit that this energy fosters health and well-being if the system in which it resides is in balance. Epistemological approaches in traditional Chinese medicine such as this one view knowledge as an interdependent whole (Hafner, 2013), unlike standard Western approaches, which hierarchically designate all possible contributing epistemological factors as subordinate, rationally discernable factors. During the Rio Olympics, Timothy Caulfield, the Canada Research Chair in Health Law and Policy at the University of Alberta, was asked by the CBC's Mark Gollom to comment on the notable use of cupping by Olympic athletes such as Michael Phelps, to which he responded, "This idea we have this life force energy running through our bodies and we can use various techniques to balance or adjust or heal that life force energy — it's a supernatural idea, not one that has any scientific foundation" (Gollom, 2016). Indeed, it would not be fair to expect the scientist to provide a different answer if the scientific foundation is not to be accountable to its religious roots.

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