Confronting the Normativity Objection:
W.V. Quine's Engineering Model and Michael A. Bishop and J.D. Trout's Strategic Reliabilism

by

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B.Sc., University of British Columbia, 2006

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ABSTRACT

The purpose of this thesis is to critically examine how W.V. Quine, Michael A. Bishop and J.D. Trout confront the normativity objection against naturalized epistemology.

In Chapter One, normativity in epistemology is introduced, followed by a brief look over Quine's grievances against the traditional approach to epistemology. Quine rejects traditional epistemology and assimilates epistemology with science. The second chapter assesses how Quine naturalizes epistemology, and the third chapter evaluates his engineering response against the normativity objection.

Bishop and Trout's theory, founded upon the Aristotelian Principle, concentrates on reasoning and epistemic excellence instead of belief justification. Strategic Reliabilism's attempt to dissolve the naturalistic challenge and resolve the normativity objection is inspected in Chapter Four.

The final chapter, succinctly, summarizes its preceding chapters and ends by suggesting a closer exploration of the link between epistemology and cognitive sciences, to better understand the underlying mechanics of the objections that face naturalized epistemology.

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1. An Introduction into Naturalized Epistemology

Naturalized epistemology, as introduced by W.V. Quine, represents a significant departure from traditional epistemology. Perhaps the most common and potent objection to naturalized epistemology has been the normativity objection. In a nutshell, this objection questions whether naturalized epistemology is capable of upholding epistemology's normative character. The normative character of epistemology is linked to the formulation of justificatory principles. Justificatory principles determine the justifiedness of beliefs. The central issue separating traditional and naturalist epistemologists is whether justificatory principles depend on empirical sciences. If dependent, what is the role of science in the formation of epistemological theories? Does natural science play an integral role in formulating epistemic justificatory principles? Are epistemic principles discovered through a priori methods or a posteriori? The fundamental factors that separate traditional epistemology from naturalized epistemology can be found in the answers to these questions. In short, the nature of the connection between science and epistemology is the central part of this debate. This thesis concentrates on how Quine, Michael A. Bishop and J. D. Trout tackle the normativity challenge that confronts naturalized epistemology.

In this introductory chapter, I will describe the essential differences between traditional and naturalized epistemology. First, I will discuss the three interrelated tenets of traditional epistemology: the centrality of a priori reasoning, the autonomy of epistemology, and the essential normativity of epistemological issues, concepts, and questions. Afterwards, I will reveal how the alleged problems of traditional epistemology result in the emergence of naturalized epistemology. In doing so, I will focus on Quine's views in sketching a picture of

naturalized epistemology. Quine's grievances with traditional epistemology, his solutions to the problems of traditional epistemology and his approach to the normativity objection will be examined thoroughly in Chapters Two and Three. Chapter Two brings to light Quine's own central tenets and the foundation of his epistemic program, and Chapter Three examines Quine's response to the normativity objection. Chapter Four evaluates Strategic Reliablism, an epistemic theory by Bishop and Trout, which distinguishes itself from traditional and other naturalized epistemic theories by disengaging itself from issues of belief justification and concentrating, instead, on excellent reasoning strategies.

The Essence of Traditional Epistemology

Epistemology is a branch of philosophy that is concerned with the theory of knowledge. Traditionally, one of its main tasks has been to offer criteria or principles to separate justified from unjustified beliefs. It "aims at the identification and defense of principles of justification."[1] Justificatory principles assess the *epistemic* value of beliefs. The epistemic assessment of a belief is distinct from a moral or a prudential assessment of a belief. Generally, the *epistemic* value of a belief is measured in relation to specific *epistemic* ends and goals, such as truth-seeking. For example, an untrue belief that confers positive practical benefits may be considered *epistemically* unjustified but morally or pragmatically justified. Thus, epistemic justification is distinct from non-epistemic justification. Epistemology makes *epistemic* evaluative judgments of various claims and propositions.

By and large epistemology is understood to be essentially normative: It examines proper avenues to evaluate and prescribe beliefs. For this reason epistemology is usually considered distinct from natural science, whose main task is to describe natural phenomena as they are,

[1] Jack S. Crumley, "Naturalized Epistemology," in *An Introduction to Epistemology*. Mountain View, Calif.: Mayfield Pub., 1999. Print. p. 196.

without making any normative judgements about how natural phenomena ought to be. For example, psychology, through its scientific methods, describes *how* beliefs are formed in our cognitive system. Traditional epistemology, by contrast, is not primarily concerned with *how* beliefs are formed; instead, it is concerned with what we *ought to* believe, or whether the beliefs that are formed are epistemically justified.

Different theories in traditional epistemology devise and defend different justificatory principles. Coherentism, Foundationalism, and Reliabilism are some of the dominant positions within epistemology, each of which have identified different criteria for the epistemic evaluation of beliefs. Although these theories may have different criteria for justification, all of them stand upon the same three foundations: All three theories have a priori commitments, consider epistemology autonomous, and view justificatory principles as normative.

Quine views traditional epistemology as Cartesian foundationalism, which is rooted in the notion that infallible or indubitable justificatory principles of epistemology are discoverable and/or knowable a priori, independent of any form of empirical investigation. In the Cartesian picture, the evaluation of any empirically-gained belief relies on the presence of a priori principles, without which justifiedness of beliefs could not be assessed. Therefore, based on the Cartesian approach, we need epistemic principles, or epistemology, to precede science in order to justify it.

Contemporary traditional epistemologists are more moderate in their approach to science. In Robert Audi's moderate version of foundationalism[2], foundational beliefs and normative principles are not considered infallible or indubitable, and empirical research or experience could, indeed, result in modification or correction of foundational beliefs and principles.

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[2] Robert Audi. "V.2 Contemporary Foundationalism." In Louis P. Pojman. *The Theory of Knowledge: Classical and Contemporary Readings*. 2nd ed. Belmont, Calif.: Wadsworth, 1999. pp. 204-211.

Matthias Steup sums up the minimal and moderate a priori commitment of most traditional epistemologists in the following two claims: According to the traditional epistemologist, first, "the questions of epistemology are Socratic: in order to answer them, no more is required than to reflect on one's present body of evidence and knowledge."[3] Second, "the answers to the questions 'What is knowledge?' and 'What is it for a belief to be justified?' are a priori knowable necessary truths."[4] Steup's moderate claims do not completely disconnect epistemology from science, since one's present body of evidence and knowledge may have been influenced by empirical experiences.

The autonomous status of epistemology is related to its a priori commitment. It is believed that "both the subject matter and the methodology of epistemology are independent of progress in the empirical sciences."[5] Epistemology is seen as an independent discipline, which contains all the information it requires to function, within itself. Any scientific advancement in the world, outside of the human mind, even if related to the functions of the human mind, does not affect the formulation of justificatory principles. There are epistemologists who take the notion of autonomy to imply that its fundamental epistemic concepts and principles are *sui generis,* unique to epistemology and cannot be reduced to or explained in non-epistemic terms.[6]

Based on the two aforementioned tenets of traditional epistemology, if we want to do epistemology, we only need to sit down in an armchair and reflect on epistemological issues. As Steup explains, "in order to succeed, nothing else is necessary. We don't need to engage in any sociological or psychological research projects, and we don't need to put on white coats and join

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[3] Matthias Steup, "Naturalistic and Nonnaturalistic Epistemology," in *An Introduction to Contemporary Epistemology*. Upper Saddle River, N.J.: Prentice Hall, 1996. p. 180.
[4] Steup, p.180.
[5] Crumley, p. 190.
[6] For example, Richard Fumerton, "The Internalism/Externalism Controversy." *Philosophical Perspectives* 2 (1988): 443-459.

neurophysiologists in their laboratories to study the biochemistry of the brain ... we are *already* in a position to find the answers we seek."[7]

To sum up, in traditional epistemology, epistemic questions are Socratic questions, reliant on a priori analysis. Epistemic concepts, properties and tools are considered to be in the possession of epistemologists, at all times, and new scientific information is not needed to analyse epistemic concerns.

Rejecting the Central Tenets of Traditional Epistemology

Quine, the chief proponent of naturalized epistemology, considers traditional epistemology a "failed or a moribund project."[8] He proposes a new naturalist outlook for epistemology that, according to many, simply replaces normative epistemology with descriptive psychology. In his famous paper, "Epistemology Naturalized,"[9] Quine assesses what he calls Rational Reconstruction, which is the process of justifying our beliefs about the natural, external world based on the content of our mental states, and he considers it a failure. Quine denies that there is a clear distinction between the natural and the non-natural or the external and the internal world. For Quine, there is only one framework in which all thoughts and mental processes, scientific investigations and evaluative judgments can be and are done, and that framework is the natural framework. His rejection of the natural-non-natural distinction or the external-internal distinction is in line with his rejection of the analytic-synthetic distinction, as well as his rejection of a priori reasoning and truths.

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[7] Steup, p. 180.
[8] Steup, p. 194.
[9] W. V. Quine, "Epistemology Naturalized," in *Ontological Relativity, and Other Essays.* New York: Columbia University Press, 1969.

Contrary to the traditional approach, Quine's epistemology is rooted in and stems from science. For Quine, epistemology cannot either precede science or be independent of it. It must operate within the context of science. Quine, in this way, assimilates his epistemic program to science, and the central tenets of science become those of epistemology. For Quine, "there is no ... cosmic exile"[10] or any vantage-point outside of the scientific framework. He employs the metaphor of Neurath's boat to illustrate the position of the philosopher relative to that of the scientist. He states that "we must rebuild [the boat] plank by plank while staying afloat in it. The philosopher and the scientist are in the same boat."[11] In a nutshell, according to Quine, there is only one working framework, it is the scientific natural framework and both the philosopher and the scientist operate in it. Any form of inquiry begins by having a simple understanding of the natural world and ordinary objects. All of our complex knowledge stems from our rudimentary knowledge of the world, which we view as common sense. Science, according to Quine, is "a continuation of common sense. And it continues the common-sense expedient of swelling ontology to simplify theory."[12]

To assert that epistemic concepts and methods are not derived from science is the anti-thesis of Quine's naturalized epistemology. According to Quine, we cannot have a philosophy or a theory that is independent of the natural world. The first-philosophy approach of Cartesian epistemology, according to which epistemology is "conceptually prior to the knowledge afforded us by our routine and scientific inquiry,"[13] has been compared to a form of dogma.[14] According

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[10] W. V. Quine, "Semantic Ascent," in *Word and Object*. Cambridge: Technology Press of the Massachusetts Institute of Technology, 1960. pp. 274-275.
[11] W. V. Quine, "Beginning with Ordinary Things," in *Word and Object.* Cambridge: Technology Press of the Massachusetts Institute of Technology, 1960. p. 3.
[12] W. V. Quine, "Two Dogmas of Empiricism," in *From a Logical Point of View: 9 Logico-Philosophical Essays*. 2d ed. Cambridge, Mass.: Harvard University Press, 1980. p. 45.
[13] Crumley, p. 194.
[14] James Maffie, "Recent Work on Naturalized Epistemology." *American Philosophical Quarterly* 27.4 (1990), p.

to this dogmatic approach, foundational beliefs that are used to form justificatory principles cannot themselves be evaluated via those newly formed principles. Thus, a major criticism of the Cartesian epistemology is that the justifiedness of foundational beliefs, upon which other beliefs are built, cannot be known with certainty or through a non-dogmatic process. Those foundational beliefs may be identified but must be accepted without question. It will be shown in the next chapter that Quine realizes that an analogous problem, the Humean predicament, confronts science, too. Science relies on induction, and induction cannot be deductively justified. Hence, science can be compared to a form of dogma as well.

The problem with first-philosophy, for Quine, can be summed up in the following manner: It expects epistemology to be done outside of the natural framework, before taking into account any truths provided by our scientific theories. Although traditional epistemology may make use of scientific data, its techniques and principles do not stem from and are not rooted in science. Quine considers this approach absurd. For Quine, the notion of "outside of the natural framework" is nonsense.

According to Quine, when we study human beliefs and knowledge, we are, simultaneously, studying a natural phenomenon, a physical human subject. We cannot separate a human from his knowledge and beliefs. Thus, to study and evaluate the justifiedness of a belief of an individual, that individual as a whole, including his psyche, his body and his environment need to be studied. It follows that, from Quine's perspective, armchair epistemology, independent of biology, psychology, sociology and neurophysiology cannot sufficiently or correctly evaluate the justifiedness of beliefs. Any new progress in biological sciences and human cognition ought to be taken into account and utilized by the epistemologist in formulating

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epistemic principles. In Chapters Two and Three, I will reveal Quine's standpoint on how an epistemologist must employ science.

Quine sees an inevitable link between epistemology and natural science. For him, this bond seriously undermines the autonomous element and the first-philosophy approach of traditional epistemology. Objections against two of the three central tenets of what Quine considers to be traditional epistemology encourage him to pursue a new program, namely naturalizing epistemology as a chapter of psychology. He states, "better to discover how science is in fact developed and learned than to fabricate a fictitious structure to a similar effect."[15]

Quine decides that it would be more useful to consider epistemology in a new setting. He declares, "epistemology, or something like it, simply falls into place as a chapter of psychology and hence of natural science."[16] It studies a natural phenomenon, a physical human subject. Quine is interested in studying the link between our empirical experiences and our complex theories that transcend them. He states, "the relation between the meagre input and the torrential output is a relation that we are prompted to study for somewhat the same reasons that always prompted epistemology, namely, in order to see how evidence relates to theory, and in what ways one's theory of nature transcends any available evidence."[17] An important positive consequence of Quine's new approach is that "we can now make free use of empirical psychology."[18] Under the new natural setting, we can examine, externally and objectively, our experiences and their transformation into beliefs and knowledge.

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[15] W. V. Quine, "Epistemology Naturalized," in *Ontological Relativity, and Other Essays*, New York: Columbia University Press, 1969, p. 78.
[16] Quine, "Epistemology Naturalized," p. 82.
[17] Quine, "Epistemology Naturalized," p. 83.
[18] Quine, "Epistemology Naturalized," p. 83.

Quine lays the foundation of modern naturalized epistemology. He aspires to remove the discipline of epistemology from the realm of a priori conceptual analysis, undermine its autonomous character, and place it in the scientifically accessible natural realm. These fundamental claims are accepted by most naturalized epistemologists.

Criticizing Quinean Naturalized Epistemology

According to traditionalists, epistemology, as a discipline that assesses the justifiedness of beliefs, is fundamentally a normative discipline. Psychology studies *causal* connections and causal connections are different from justificatory connections. The former portrays *how* we come to believe what we do, whereas the latter tells us what we *ought* to believe. Thus, epistemology and psychology have two different goals, and each has its own methods to attain those goals. Traditionalists argue that a psychologised epistemology, fails to be epistemology because it fails to preserve its normative dimension.[19]

Quine chooses to respond to this objection from an engineering direction. For Quine, normative epistemology is an applied science. Engineering is inherently normative. Normative guidelines are in place to inform the applied scientist, how he *ought to* proceed to achieve a pre-determined goal. Similarly, a normative epistemologist, with a pre-determined goal in mind, evaluates options and prescribes the most efficient routes towards the desired end. In normative epistemology as in engineering, normative principles are formulated through a natural methodology. These principles are corrigible and will be ever-evolving under the pressure of scientific advancements. For Quine, "the normative character of naturalized epistemology derives from the normative character of science itself."[20] Nonetheless, it is a good question to ask if Quine's epistemologist or the scientist is able to formulate normative principles without

[19] Crumley, p. 196.
[20] Crumley, p. 198.

engaging in any form of conceptual analysis; the type of analysis that the traditionalist is committed to.

Quine is often considered to be a reductionist, who holds the view that epistemic properties are identical to natural properties via bridge laws. A simple non-epistemological example of such reduction is the example of the reduction of water to H2O. Water is in our daily-language domain, whereas H2O is in the chemical-compounds domain. Although they are one and the same, in our daily discussions we are not concerned with specific chemical reactions of H2O. These two terms indicate one substance, yet the issues that relate to each of them are different. They are on two different domains, connected via bridge laws, "laws that describe the connection between different domains or groups."[21] Quine sees a similar connection between epistemology and science; the underlying subject is one. For Quine, all epistemic normative issues are reducible to phenomena within the natural framework.

According to Quine, normative epistemology is the "technology of truth-seeking,"[22] and for him the "evidence for greater proximity to the truth is enhanced predictability."[23] A way to better understand Quine's epistemic position is to explore the relationship between science and technology. Science gives rise to technology, and technology in turn assists scientific research. Likewise, Quine considers normative epistemology as a technology that stems from science, and complements science to enhance science's search for truth.

One central question that will be examined in the following chapters is: Can science *itself* discover normative principles? From the Quinean perspective it may be replied that everything

[21] Crumley, p. 192.
[22] W.V. Quine, "Reply to Morton White," in Lewis Edwin Hahn, and Paul Arthur Schilpp. *The Philosophy of W.V. Quine*. La Salle, Ill.: Open Court, 1986. p. 665.
[23] Crumley, p. 198.

that we know *is* science. Normative principles are derived from what we know. Therefore, they are derived from science. Normative epistemology uses the assumed truths of science to discover normative principles, in order to, ultimately, improve science itself. The scientist and the epistemologist on Neurath's boat, afloat on the natural framework, work together to demystify our world.

In the third chapter of my thesis, I will examine the normativity objection against Quine's normative epistemology and his actual and potential responses to it.

Michael A. Bishop and J.D. Trout's Strategic Reliabilism

In the fourth chapter, I will examine Strategic Reliabilism, a naturalistic theory by Bishop and Trout. Their theory breaks away even further from the traditional approach to epistemology. It focuses on the epistemic status of reasoning strategies and is unconcerned with justifiedness of beliefs. Bishop and Trout consider the normativity of epistemology to stem from its ability to guide practical reasoning strategies, and not the ability to evaluate beliefs.

They hold the view that traditional epistemology, or as they label it, Standard Analytic Epistemology, is purely descriptive at its core; it merely "describe[s] how privileged (mostly) Westerners with Ph.D.s in philosophy engage in epistemology"[24] and what they, according to their epistemic intuitions and judgments consider justified. Bishop and Trout argue that to seek universal application of culture-based principles is "brute cultural imperialism."[25] For these reasons and more, they contend against the goals and focal points of traditional epistemology, and aim to formulate a theory that is in their mind, not imperialistic and truly normative. In

[24] Michael A Bishop and J. D. Trout. *Epistemology and the Psychology of Human judgment*. New York: Oxford University Press, 2005. p.108.
[25] Bishop and Trout, p. 108.

addition, they consider traditional epistemology impractical and useless and, in turn, proceed to devise a healthy epistemic theory that is "theoretical, practical, and social."[26]

In Chapter Four, I will assess their method of addressing the normativity objection and the naturalistic challenge against their theory and more broadly, against naturalized epistemology. I will show that though their theory contributes greatly to the augmentation of the naturalized program, like Quine's theory, it has much room for improvement, especially at its core.

Concluding Remarks

The contemporary focus on naturalized epistemology is a relatively recent phenomenon, which gained momentum through Quine's publications. However, since he introduced a paradigm-shifting approach to the ancient discipline of epistemology, many traditional epistemologists have taken issue with it and proceeded to carefully inspect it. Constructive criticisms and objections either from the non-naturalist traditional camp or from other naturalists resulted in the improvement of the naturalized program. Nevertheless, many concerns remain and the naturalists continue to seek ways to further enhance the naturalization of epistemology.

Some naturalists, such as Bishop and Trout, inspired by Quine, took a vastly different approach to epistemology. They aspire to formulate a theory that is practical and contributes to making the world a better place. To achieve their goals, they completely reoriented the focus of epistemology.

[26] Bishop and Trout, p. 17.

2. Quine's Naturalized Epistemology Revisited

Quine's epistemology is part and parcel of his naturalism, and as Gibson states, "Quine's philosophy is nothing if not naturalistic!"[27] In this chapter, I aim to explain the relationship between his epistemology and his naturalism by, first, stating the tenets of and grounds for his naturalism. I will then elucidate how Quine's naturalism entails and supports his epistemic program. Quine's epistemology is manufactured by and through science and it advances and improves only through science's expansion and enhancement. It resides strictly in the natural framework, and within our best scientific theory of the world. Quine considers epistemology to be "science self-applied"[28] or "the scientific study of the scientific process."[29] His epistemology is inseparably intertwined with natural science. Moreover, he considers epistemology to be "the technology of truth-seeking."[30] Technology is a product of scientific research. Thus, by viewing epistemology as a form of technology, Quine makes it clear that his epistemology is rooted in science.

Following an overview of Quine's naturalism and its link to his epistemology, I will briefly point to the concerns of traditionalists against Quine's obscurification, or according to some, the removal, of the normative element of epistemology. Quine's defence of his own theory will be stated and critically evaluated, afterwards, and it will be elaborated much further in the next chapter.

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[27] Robert F. Gibson, "Quine On Naturalism And Epistemology." *Erkenntnis* 27.1 (1987): pp. 57-78.
[28] W. V. Quine, Dagfinn Føllesdal, and Douglas B. Quine, *Quine in Dialogue*. Cambridge, Mass.: Harvard University Press, 2008. p. 24.
[29] Quine, Føllesdal and Quine, p. 24.
[30] W.V. Quine, "Reply to Morton White," in Lewis Edwin Hahn, and Paul Arthur Schilpp. *The Philosophy of W.V. Quine*. La Salle, Ill.: Open Court, 1986. p. 665.

Discussions of Quine's epistemology often focus on his paper "Epistemology Naturalized,"[31] in which an integral section of his views on epistemology is presented. However, prior to understanding Quine's naturalism, his epistemology cannot be coherently understood or fairly explained. Most of his arguments and supports for his naturalism can be found in many of his other writings. By examining some of these other writings, in addition to "Epistemology Naturalized," in this chapter, I will provide a well-rounded picture of Quine's epistemic program and pave the way for his response to the normativity objection in the next chapter.

Quine's Holism and Unregenerate Realism

Quine's naturalism is fuelled by and grounded in his holism, "A holistic or system-centered attitude"[32] towards truth and statements of theories, as well as his Unregenerate Realism, which he describes as "the robust state of the mind of the natural scientist who has never felt any qualms beyond the negotiable uncertainties internal to science."[33]

According to Quine "holism blurs the supposed contrast between the synthetic sentence, with its empirical content, and the analytic sentence, with its null content."[34] According to his holism, a theory composed of multiple statements is a system, which can only be understood when viewed as a whole. Many statements, without which the system cannot be complete, cannot be understood independently of the system due to the lack of unique empirical content. For example, the statement "all adaptive traits are naturally selected" is only meaningful when viewed within the biological theory of evolution in relation to other statements in that theory. Some other statements within the theory of evolution, which are based on the empirical

[31] W. V. Quine, *Ontological Relativity, and Other Essays,*. New York: Columbia University Press, 1969.
[32] W. V. Quine, "Five Milestones of Empiricism," in *Theories and Things*. Cambridge, Mass.: Harvard University Press, 1981. p. 72.
[33] Quine, "Five Milestones of Empiricism," p. 72.
[34] Quine, *Theories and Things.* p. 71.

observation of the perpetuation of various traits in surviving offspring, provide the former statement with meaning. Quine's holism is in direct conflict with two of the central tenets of modern empiricism, namely, the analytic-synthetic distinction and empirical reductionism.

Quine's Rejection of Empirical or Radical Reductionism

According to empirical reductionism, for each statement within a theory to have meaning it must be independently connected to an immediate empirical experience via a logical construct. In his philosophy, Quine undermines the validity of empirical reductionism. He states, "it is misleading to speak of the empirical content of an individual statement – especially if it is a statement at all remote from the experiential periphery of the field."[35] He views human knowledge as a "man-made fabric"[36] or a "field of force"[37] or a "sentence-to-sentence structure."[38] The boundaries of this superstructure or force field are determined via direct empirical experiences. However, the interior part of it is organized and interconnected through logical laws and not experience. According to this picture, only the statements on the exterior part of this network are based on immediate experience and can be empirically reduced. The statements or beliefs that form the interior part of this field do not have any empirical content, and cannot be empirically reduced. Therefore, we cannot reduce each and every statement in a theory to an immediate sensory experience. For example, the statement "there is an aeroplane in the sky" is immediately experienceable, and is readily empirically reducible. However, the statement "that aeroplane needs to counter the gravitational force in order to fly in the sky," though directly related to the previous statement, is not itself immediately perceivable. To understand it, knowledge of

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[35] W. V. Quine, "Two Dogmas of Empiricism," in *From a Logical Point of View: 9 Logico-Philosophical Essays*. 2d ed. Cambridge, Mass.: Harvard University Press, 1980. p. 43.
[36] Quine, "Two Dogmas of Empiricism," p. 42.
[37] Quine, "Two Dogmas of Empiricism," p. 42.
[38] W. V. Quine, "Things and Their Place," in *Theories and Things*. Cambridge, Mass.: Harvard University Press, 1981. p. 20.

gravitational forces or Newtonian physics is required. The peripheral outer part of this Newtonian system is supported via empirical experiences, and hence, via empirically reducible statements, but the inner part of this system consists of inter-connected logical inferences. In this example, the latter statement does not have its own empirical content, and for it to be meaningful it relies on observations such as the observation stated by the former statement. Thus, Quine's holistic and system-based view of human knowledge undermines empirical reductionism.

From a different angle, in his rejection of empirical reductionism, or what he calls "radical reductionism,"[39] Quine reminds his readers that "the Humean predicament is a human predicament"[40] and that the empiricist has not resolved Hume's sceptical challenge.

Hume's challenge emerges from the proposition that nature is uniform. According to this belief, coined as the Principle of Uniformity of Nature, "instances [of nature] of which we have had no experience, must resemble those of which we have had experience, and that the course of nature continues always uniformly the same."[41] However, Hume wonders, "[W]hat is the nature of that evidence which assures us of any real existence and matter of fact, beyond the present testimony of our senses, or the records of our memory[?]"[42] In other words, Hume wonders how, without any empirical evidence, we could be certain of the Principle of Uniformity in Nature. This general principle cannot be proven deductively since the proposition that nature is uniform depends contingently on specific observations and experiences of nature. In this sense, it cannot be a necessary truth and it is inferred inductively. The challenge, thus, is that all of our scientific reasoning and conclusions, which are inductive and dependent upon this principle, beg the question. We cannot perform induction relying upon a principle that is, itself, inductively

[39] Quine, "Two Dogmas of Empiricism*"* in *From a Logical Point of View: 9 Logico-philosophical Essays*. p.38.
[40] Quine, "Epistemology Naturalized," p. 72.
[41] David Hume, *A Treatise of Human Nature*. 2d ed. Oxford: Clarendon Press, 1978. Book I, Part III, Section VI.
[42] David Hume. *An Enquiry Concerning Human Understanding*. Kitchener, Ont.: Batoche, 2000. Enquiry IV.

inferred. We cannot prove a conclusion by relying on an unprovable premise. Therefore, this problem of induction and the inability to rely on deduction to understand nature continues to fuel objections against empiricism. This Humean predicament is unavoidable since the Principle of Uniformity of Nature cannot possibly be deductively or demonstratively proven.

Following his understanding of Hume's challenge and predicament, Quine states, "the mere fact that a sentence is *couched* in terms of observation, logic, and set theory, does not mean that it can be *proved* from observation sentences by logic and set theory."[43] Observation sentences, as stated above, depend on a principle which cannot be proven. Thus, if observation sentences cannot be proven, then any sentences that are based on observation sentences cannot be proven either, even if they are linked through a firm logical construct.

Another step towards the rejection of radical reductionism is through assessing the link between our observations and the required supplemental statements that help us comprehend our observations. To understand our observations, we require supplemental or supporting statements, which help us interpret, correctly, what we observe. These supplemental statements must be available and accessible to us prior to our immediate sensory experiences, in order for our experiences to have any meaning for us. The number of these available statements outweighs the number of our immediate sensory experiences, at any moment. Since these supporting statements must be available prior to our sensory experiences, it cannot be said that they are deduced from our sensory experiences. The absence of this deductive connection counters radical reductionism. Therefore, it is not the case that each statement within a theory can be confirmed or infirmed by an immediate sensory experience. Rather, on the contrary, each

[43] Quine, "Epistemology Naturalized," p. 74.

sensory experience requires to be placed in a theory or a system in order to be confirmed or infirmed.

In any scientific theory, in addition to statements about physical observable bodies, there are theoretical statements about absent matters of fact. For example, we can observe a large ship floating on the sea, but to comprehend, or at least accept, the possibility of it doing so without sinking, we require to know, or at least be aware of, non-observable facts such as, facts about gravity, water resistance, physical power, acceleration, buoyancy, physical forces, equilibrium, and other absent matters of fact. Roger F. Gibson Jr. points out that "no statement about the *absent matters of fact* can be deduced from statements about such bodies."[44] Our observation of a floating ship does not, on its own, provide us with the required information to deductively attain any conclusion about the aforementioned absent matters of fact. Rather, only when we place this observation within a larger system, can we begin to understand it, and in turn, use it to perhaps further develop our system.

Therefore, as indicated by Quine, only through a holistic theory-based approach can we find meanings for our observations and theoretical statements. From a holistic perspective, only within a system, which includes both observational and theoretical statements, can statements be understood. It is misguided to claim that each statement is comprehensible on its own. Thus, Quine's holistic approach seems preferable over the empirical reductionism of logical positivists or Quine's other predecessors.

[44] Roger F. Gibson. *Enlightened Empiricism an Examination of W.V. Quine's Theory of Knowledge*. Gainesville, FL: University Presses of South Florida, 1988. p. 27.

Quine's Rejection of the Analytic-Synthetic Distinction

The analytic-synthetic distinction divides propositions into two categories, analytic and synthetic, and states that the former type of propositions are true by virtue of their meanings without requiring empirical verification, and the latter type of propositions are true when empirically verified. Analytic truths are "grounded in meanings independently of matter of fact."[45] Their truth relies on their meaning alone. Analytic statements in a theory are those "that a theorist could hold true in the face of *all* experiences."[46] Conversely, synthetic truths are "grounded in facts"[47] and to evaluate the truth of a synthetic statement empirical investigation is required. In this sense, synthetic statements "hold true contingently on experience."[48]

Quine rejects this distinction. He states, "it becomes folly to seek a boundary between synthetic statements, which hold contingently on experience, and analytic statements, which hold come what may, if we make drastic enough adjustments elsewhere in the system."[49] For example, within the theory of feminism lies the issue of gender equality in the work place. A sub-section of this issue is concerned with terms and titles that are used at work. Previously, prior to drastic adjustments to this system, the statement "an actor is a male performer" was considered an analytic statement and true by virtue of meaning alone. Empirical experiences would not affect the truth-value of this statement. However, in recent times, due to a major societal transformation with regard to gender equality in the work place, the term "actor" could now be used for both males and females. This implies that the aforementioned statement cannot be considered true merely by virtue of its meaning and requires empirical verification.

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[45] Quine, "Two Dogmas of Empiricism," p. 20.
[46] Gibson, p. 28.
[47] Gibson, p. 28.
[48] Quine, "Two Dogmas of Empiricism," p. 43.
[49] Quine, "Two Dogmas of Empiricism," p. 43.

Therefore, in the social theory of gender equality, empirical observations and experiences of inequality at work led to drastic adjustments and, gradually and through multiple steps, affected what was previously deemed as an analytic statement and changed the assessment of its epistemic value. This example supports Quine's view that the analytic-synthetic distinction, which relies on the existence of different types of truths and statements, must be rejected.

In his naturalizing endeavour, Quine links the analytic-synthetic distinction to radical reductionism, the two dogmas of modern empiricism. He states, "the dogma of reductionism, even in its attenuated form, is intimately connected with the other dogma - that there is a cleavage between the analytic and the synthetic."[50] He continues, "as long as it is taken to be significant in general to speak of the confirmation and infirmation of a statement, it seems significant to speak also of a limiting kind of statement which is vacuously confirmed, *ipso facto*, come what may; and such a statement is analytic."[51] According to Quine, the need to justify each statement demands the availability of verificatory statements. The need for verificatory sentences leads to the emergence of the analytic-synthetic distinction dogma. Analytic statements would be required to confirm or disconfirm synthetic statements. However, unlike synthetic statements, which are rooted in empirical sensory experiences, these analytic statements would be based on conceptual analysis and independent of empirical experiences.

It is worth noting that analytic statements, in this sense, resemble a priori reasoning: neither of them are derived from or rely upon empirical experiences, yet they may have immense influence on our understanding of our empirical experiences. According to traditional epistemology, a priori commitments are independent of empirical experiences. Similarly, in the

[50] Quine, "Two Dogmas of Empiricism," p. 41.
[51] Quine, "Two Dogmas of Empiricism," p. 41.

case of analytic statements, they are valid or true in virtue of their meanings, regardless of how their meanings relate to the world. Thus, Quine's objections against a priori reasoning and analyticity share the same root. They are both outside of the framework of experiential, empirical and natural science.

The Scientific Practices Argument Against the Analytic-Synthetic Distinction

Quine refutes analyticity from two angles. First, from the angle of what Gibson calls the "scientific practices argument."[52] Quine states, "any statement can be held true come what may, if we make drastic enough adjustments elsewhere in the system."[53] He holds the view that the truth-value of any statement within a system directly depends on other statements and assumptions within that system. Any change to supplementary statements results in a change in the truth-value of the statement under assessment. "Even a statement very close to the periphery can be held true in the face of recalcitrant experience by pleading hallucination or by amending certain statements of the kind called logical laws."[54] According to Quine's holistic approach, it is possible to either retain a belief or reject a belief, even if they are contrary to one's experience, by making "drastic enough adjustments" somewhere else in the relevant system or theory. In short, regardless of the location of a statement within a system, whether near the periphery and based on experience or near the centre and remote from experience, any statement can be either accepted or rejected depending on other statements in other parts of the system.

Quine supports his view by pointing to two well-known paradigm-shifts in natural science: The shift from Newtonian physics to Einsteinian, and the shift from Aristotelian Biology to Darwinian. A statement may be rejected and considered false in the Newtonian physics, but

[52] Gibson, p. 33.
[53] Quine, "Two Dogmas of Empiricism," p. 43.
[54] Quine, "Two Dogmas of Empiricism," p. 43.

accepted as true in the Einsteinian physics. The truth-value of that statement is dependent upon the system it is in, and whether it fits coherently in that system. Similarly, many statements in a Darwinian system are often readily rejected in an Aristotelian biology and vice versa. Therefore, following his demonstration of the plasticity of truth-values of statements within systems, Quine rejects the absolute distinction between analytic-synthetic statements and truths. According to Quine there cannot be any statement that remains true "come what may." In other words, there cannot be any strict analytic statement that remains true in all systems. The truth-value of all statements, regardless of their meanings, depends on the systems they are in. Therefore, in this sense, for Quine, "truth is immanent ... We must speak from within a theory, albeit any of various."[55] Truth is theory-dependent.

Later, it will be shown that for Quine, there is, ultimately, only one overriding theory of the world, and truth-value of all statements depends on whether they are in or out of this theory. According to Quine, this world theory is "our best scientific theory of the time."[56]

The Language Learning Argument Against the Analytic-Synthetic Distinction

The second angle from which Quine refutes the analytic-synthetic distinction is what Gibson calls "the language learning argument."[57] In his paper, "The Nature of Natural Knowledge"[58] Quine lays out his theory of language. He states, "science is a linguistic structure that is keyed to

[55] W. V. Quine, "Things and Their Place in Theories," in *Theories and Things*. Cambridge, Mass.: Harvard University Press, 1981. p. 22.
[56] W. V. Quine, Dagfinn Føllesdal, and Douglas B. Quine. *Quine in Dialogue*. Cambridge, Mass.: Harvard University Press, 2008. p. 242.
[57] Gibson, p. 33.
[58] W. V. Quine, and Roger F. Gibson, "The Nature of Natural Knowledge*,"* in *Quintessence: Basic Readings from the Philosophy of W.V. Quine*. Cambridge, Mass.: Belknap Press of Harvard University Press, 2004. pp. 287-300.

observation at some point."[59] In other words, according to Quine, the theoretical foundation of science is formed, conformed to and regulated through observation.

In the abovementioned paper Quine attempts to show the relationship between science, the language of science and our observations. He does so via what he labels "observation sentences."[60] He defines an observation sentence as "an occasion sentence whose occasion is not only intersubjectively observable but is generally adequate, moreover, to elicit assent to the sentence from any present witness conversant with the language."[61] For example, the statement "it is now raining" can be either confirmed or rejected by any individual, who is present when this sentence is uttered. Whether it is indeed raining or not is observable by all subjects. One important feature of observation sentences is that they are "keyed directly to observation."[62] They are caused and *verified* by observations. There is a cause-and-effect relationship between observation and observation sentences. Observation sentences stem from and conform to our experiences and observations; the former is uttered directly as a result of the latter. In other words, the latter is *necessary* for the former to materialize.

Gibson observes two essential roles for Quine's observation sentences, evidential and semantical. Observation sentences have an evidential role, according to Gibson, because "they are the kind of sentences that enjoy virtually unanimous acceptance among the members of speech community."[63] The subject of such sentences, which is observed, is intersubjectively available to be verified. Even two theorists who may disagree on various theoretical statements find a common ground at the level of observation sentences. For example, imagine that a cup

[59] Quine and Gibson, p. 292.
[60] Quine and Gibson, p. 292.
[61] Quine and Gibson, p. 292.
[62] Quine and Gibson, p. 293.
[63] Roger F. Gibson, *Enlightened Empiricism an Examination of W.V. Quine's Theory of Knowledge*. Gainesville, FL: University Presses of South Florida, 1988. p. 55.

with half of its capacity filled with water is placed on a table. The pessimist sees it and considers it to be half empty, whereas the optimist sees it and considers it to be half full. Both viewers, who hold two opposite views, share the common observation that there is a cup with half of its capacity filled with water.

In addition to their evidential role, the inseparable link between observation sentences and environmental stimuli gives them a semantical role, as well. In contrast to observation sentences, non-observation sentences are compound sentences, which cannot be understood without referring to simpler, more basic, sentences. These simpler reference sentences, themselves, lay upon yet simpler reference sentences, and in this sense there is a linguistic superstructure in place. At the very bottom of this superstructure lie observation sentences, whose reference points are not other sentences, rather they are environmental stimuli. These environmental stimuli, which cause the utterance of observation sentences, are considered nonverbal reference points. For example, for the observation sentence "it is raining," rain is the nonverbal reference point. The sensory experience of rain, an environmental stimulation, causes the assent of that observation sentence and simultaneously verifies its content.

Gibson states, "although most of language consists of interverbal associations, somewhere there have to be nonverbal reference points, nonverbal circumstances that can be intersubjectively appreciated and associated with appropriate utterances ... we learn our language from other people amid intersubjectively appreciable stimulus conditions."[64] Using the previous rain example, since the sensory experience of the pouring rain causes the observation sentence "it is raining" to be uttered, it could be said that there is a causal connection between sensory experiences and observation sentences. The former causes the latter. These causes or these

[64] Gibson, p. 55.

environmental stimuli are the nonverbal reference points of observation sentences. Since all members of the speech community share common sensory experiences of their common environment, they unanimously agree upon the content of observation sentences that are the result of such experiences. In other words, because they all are affected by the same cause, the same external physical world, they all agree upon the same effects, namely the observation sentences. "Raining" is the cause, and "it is raining" is its effect.

Therefore, through these two central roles, evidential and semantical, observation sentences become the link between our best scientific theory of the world and observation, in Quine's theory of language. They are the simplest form of sentences, which connect the world to our complex scientific language.

The next stage of Quine's language theory that needs to be clarified is the progress from simple observation sentences to coherent complex theoretical sentences. He states, "this progress is not a continuous derivation, which, followed backward, would enable us to reduce scientific theory to sheer observation. It is a progress rather by short leaps of analogy."[65] Unlike the continuous cause-effect progression from observation to observation sentences, the motion from observation sentences to theoretical sentences is discontinuous and demands analogical leaps. The demand for these leaps gives Quine another reason to oppose the analytic-synthetic distinction. According to Gibson, "these analogical links are so tenuous as to allow the kind of gerrymandering of truth values of sentences, or empirical slack, that holism evinces."[66] Analogical connections between observation sentences and theoretical sentences are not as firm as direct causal connections between experience and observation sentences. This unconstrained

[65] W. V. Quine and Roger F. Gibson, p. 297.
[66] Gibson, *Enlightened Empiricism an Examination of W.V. Quine's Theory of Knowledge*. p. 33.

type of connection, between observation sentences and theoretical statements, provides room for disagreements and future revisions. Members of the speech community, for a variety of reasons, may not attain consensus regarding various analogies, and subsequently, justified incongruities in their theoretical statements may appear. Incongruities in theoretical statements within a system, ultimately, imply lack of consensus regarding the truth-value of statements within that system. The plasticity of the truth-value of statements within a system further supports Quine's rejection of a clear distinction between analytic and synthetic statements.

Quine bolsters his refutation of the analytic-synthetic distinction by stating, "a boundary between analytic and synthetic statement 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."[67] Through this tactic, Quine places the burden of proof on the shoulder of the empiricist to first show that the analytic-synthetic distinction does indeed exist, before demanding arguments for its refutation.

To sum up, Quine removes empirical reductionism and analytic-synthetic distinction from the epistemologist's toolbox. He considers these tools to be expired and unavailable. Consequently, he deems any epistemic theory that makes use of them to be outdated and flawed.

In addition, as stated previously, Quine's rejection of analyticity shares a common root with his rejection of a priori reasoning. When Quine states that "no statement is immune to revision"[68] he is, simultaneously, rejecting both analyticity and a priori truths since, by definition, they are meant to be immune from revision. Furthermore, Quine uses Godel's Theorems as an example, to show that even if a priori truths did exist, other truths are not

[67] Quine, "Two Dogmas of Empiricism*."* p. 37.
[68] Quine, "Two Dogmas of Empiricism *,"* p. 43.

deducible from them. He reminds his readers that "even the truths of elementary number theory are presumably not in general derivable ... by self-evident steps from self-evident truths."[69]

In short, Quine extensively argues against analyticity and a priori commitments in order to undermine the traditional approach to epistemology and to set the stage for his new naturalized program.

Quine's Epistemology is Rooted in His Naturalism

Following his dismissal of the traditional approach to epistemology, Quine is left to fill the gap with his own theory. His naturalism inspires Quine to fill the gap with a naturalized theory. He sees naturalistic philosophy as "continuous with natural science. It undertakes to clarify, organize, and simplify the broadest and most basic concepts, and to analyze scientific method and evidence within the framework of science itself."[70] Quine explicitly declares "... my position is a naturalistic one; I see philosophy not as an *a priori* propaedeutic or groundwork for science, but as continuous with science. I see philosophy and science as in the same boat – a boat which, to revert to Neurath's figure as I so often do, we can rebuild only at sea while staying afloat in it. There is no external vantage point, no first philosophy. All scientific findings, all scientific conjectures that are at present plausible, are therefore in my view as welcome for use in philosophy as elsewhere."[71] In Quine's scientific framework, neither analyticity nor a priori commitments have any place.

Quine's naturalism is founded upon two cardinal tenets of empiricism. "One is that whatever evidence there *is* for science *is* sensory evidence. The other ... is that all inculcation of

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[69] W. V. Quine and J. S. Ullian. *The Web of Belief*. 2d ed. New York: Random House, 1978. p. 65.
[70] W. V. Quine, and Roger F. Gibson. "Naturalism; or, Living within One's Means," in *Quintessence: Basic Readings from the Philosophy of W.V. Quine*. p. 281.
[71] Quine, "Natural Kinds," pp. 126-127.

meanings of words must rest ultimately on sensory evidence."[72] Quine's adherence to these two tenets keeps him under the umbrella of empiricism, however, his dissociation from a priori reasoning and analyticity separates him from what he considers to be the modern empiricism that empiricists such as Locke adhered to.

Regarding the ontological question, or "what there is," for Quine, the answer is whatever natural science says there is. He rejects scepticism towards the existence of the natural world, and on the same note, he rejects the accusation of circularity for using science to justify science. According to Quine, even the sceptic uses "rudimentary physical sciences ... as a springboard for scepticism"[73] to speak of illusions and reality. He insists on making the point that "sceptical doubts are scientific doubts."[74] For the sceptic to speak of illusions, he needs the existence of physical bodies to support his case. "Illusions are illusions only relative to a prior acceptance of genuine bodies with which to contrast them."[75] For example, the material existence of trees and water must be accepted prior to having a mirage of an oasis in a dry desert. The former is the pre-requisite for the latter. Following the fact that the physical world must exist, Quine proceeds to state that any questions about this physical world or anything in it, are scientific questions and are answerable only through natural science. Even sceptical questions are scientific questions.

Quine's Epistemologist is Like a Scientist

Once Quine fortifies his position that the only available framework for any investigation and reasoning is the natural scientific framework, he proceeds to convey how, within this framework, a researcher, a philosopher or an epistemologist, should pursue his studies. According to Quine,

[72] Quine, "Epistemology Naturalized ," p. 75.
[73] W. V. Quine, and Roger F. Gibson. "The Nature of Natural Knowledge*,"* p. 288.
[74] W. V. Quine, and Roger F. Gibson. "The Nature of Natural Knowledge*."* p. 288.
[75] W. V. Quine, and Roger F. Gibson. "The Nature of Natural Knowledge*."* p. 287.

it is through unregenerate realism or "the robust state of the mind of the natural scientist who has never felt any qualms beyond the negotiable uncertainties internal to science"[76] that scientific inquiries, epistemological inquiries included, need to be pursued.

Quine's holism dismantles a priori reasoning and analyticity and his unregenerate realism fills the methodological void by bringing in natural scientific methods of inquiry. He encourages a similar type of approach to epistemology as a scientist takes toward natural science. A pharmacologist in his research is not concerned about possible philosophical issues that may surround medicine or life. Rather, through a scientific methodology, he aims to discover facts about interactions between chemicals and living organisms. A pharmacologist relies on scientifically-approved propositions, his own observations and experiments. His results and findings inform other scientists and eventually the general public about the nature of medicines and their interaction with human bodies. He informs people that if they desire to return to a healthy state, what drugs they *ought* to consume and how they *ought* to consume them, and what drugs they *ought* to stay away from. He gives such normative recommendations based on what is available to him through scientific research, studying how chemicals react with the human body.

Quine encourages a similar approach to epistemology. According to Quine, the normative epistemologist is like an applied scientist whose focus is to enhance our understanding of the world via improving our best scientific theory of the world. The epistemologist studies our theory of the world to discover how the meager input into our minds through our sensory system is transformed into a torrential output of complex theories about our world. Through his empirical research, he extracts and formulates epistemic principles, which he will, subsequently, use to determine how we ought to correct and enhance our theory. As a result, our scientific

[76] Quine, "Five Milestones of Empiricism," p. 72.

theory of the world will expand more efficiently and we will attain more true beliefs. Quine's approach to normative epistemology will be comprehensively examined in the next chapter.

Quine's approach to solely focus on scientific methodology and scientific findings is what distinguishes him from his predecessors, who though did not reject the use of science, added a priori reasoning and analyticity to their methodologies as well. The addition of the latter elements is what Quine rejects, considering them implausible and viewing them as the cause of distorted and unrealistic epistemological theories.

Quine's methodological and metaphysical naturalism and his epistemology are inseparably intertwined. His epistemology emerges from his naturalism and his naturalism is understood and explained through his epistemology. The relationship between his epistemology and his naturalism or ontology is that of a reciprocal containment. He states, "naturalism does not repudiate epistemology, but assimilates it to empirical psychology."[77]

Keeping in mind that according to Quine's ontology there is only the framework of natural science, he continues, "science itself tells us that our information about the world is limited to irritations of our surfaces"[78] or our nerve endings. In other words, science informs us that it is through our nerve endings that we receive information from the external world, and it is via the employment of this information that we build complex scientific theories about the world. The meager input, which Quine speaks of, relies on the function and capacity of these nerve endings. What we receive through these nerve endings is all that we have in our possession when we formulate a complex multidimensional theory about the external world; the torrential output. "[T]he stimulation of [our] sensory receptors is all the evidence that anybody has had to go on,

[77] Quine, "Five Milestones of Empiricism," p. 72.
[78] Quine, "Five Milestones of Empiricism," p. 72.

ultimately, in arriving at [our] picture of the world."[79] The job of the naturalized epistemologist is to study the link between the information received through our sensory receptors and our theory of the world. His job is to understand the link between the meager input and the torrential output, both of which fall within the natural framework. To do so, he is "well advised to use any available information, including that provided by the very science whose link with observation [he is] seeking to understand."[80]

The examination of this link is a scientific endeavour. The information that we receive through our nerve endings is from nature. The link between nature and the human sensory receptors is a natural link. The outcome of receiving information through our receptors physically changes our human body or more specifically our human brain. All of the available data that needs to be studied can be studied through scientific means. To move beyond such available scientific means and framework, is what Quine advises against, and he considers doing so, not only unnecessary but inherently flawed and epistemically unjustified. Any information beyond what is available in the natural framework either is or relies on untestable conjectures, which may or may not correspond to the real world. Therefore, for Quine, the only feasible approach to epistemology is the one that places it as a "chapter of psychology and hence of natural science."[81]

According to Quine's naturalism, epistemology guides us "to see how evidence relates to theory, and in what ways one's theory of nature transcends any available evidence."[82] In his own words Quine explicitly states how he views epistemology. Quine reorients epistemology and describes it as "the study of how we animals can have contrived that very science, given just that

[79] Quine, "Epistemology Naturalized," p. 75.
[80] Quine, "Epistemology Naturalized," p. 76.
[81] Quine, "Epistemology Naturalized," p. 82.
[82] Quine, "Epistemology Naturalized," p. 83.

sketchy neural input."[83] In a nutshell, for Quine, epistemological questions are scientific questions about the acquisition of science. His epistemology is a science that studies science.

Science, according to Quine, is "a continuation of common sense. And it [science] continues the common-sense expedient of swelling ontology to simplify theory."[84] Our common sense, which is innate and modifiable via experiences, is endowed upon us by the evolutionary process of natural selection.[85] Quine considers our common sense to be rudimentary physical science.[86] Thus, according to Quine, science is a superstructure that is gradually built upon very simple and basic observations about physical bodies. How this superstructure is formed, and how it can be enhanced, is what Quine considers to be the job of the epistemologist to find out.

Quine's Epistemology and Ontology Reciprocally Contain One Another

On the one hand, according to Quine's new program, epistemology, being a chapter of psychology, is contained within science. On the other hand, science is the outcome of the stimulations of nerve endings and sensory receptors. In this sense, natural science is contained within epistemology. "There is thus reciprocal containment, though containment in different senses: epistemology in natural science and natural science in epistemology."[87] This reciprocal containment is the integral part of the Quinean program, which is missing in traditional epistemology. The old epistemology is concerned with containing natural science, defying the notion that itself is contained within natural science. According to Gibson, "Quine's philosophy cannot be properly understood without grasping the nature of this intimate relationship."[88] The significant implication of this reciprocal containment in Quine's epistemological enterprise is

[83] Quine, "Things and Their Place in Theories," p. 21.
[84] Quine, "Two Dogmas of Empiricism," p. 45.
[85] W. V. Quine, and Roger F. Gibson. "The Nature of Natural Knowledge," p. 290.
[86] Quine, and Gibson. p. 290.
[87] Quine, "Epistemology Naturalized," p. 83.
[88] Gibson, *Enlightened Empiricism an Examination of W.V. Quine's Theory of* Knowledge. p. 45.

that "we can now make free use of empirical psychology."[89] Natural science expands the reach of epistemology and, simultaneously, epistemology improves our understanding of natural science. By ignoring or dismissing the containment of epistemology within natural sciences, the capability and reach of epistemology remains limited, and epistemology remains unable to become in line with our advanced understanding of the natural world or of the human subject. For example, an epistemological theory that operates on the assumptions of Cartesian dualism and the Cartesian mind-body separation cannot be in line with recent findings in evolutionary or brain sciences and, thus, falls outside of the natural framework. This disconnection from the natural world would in turn make the normative principles of this epistemological theory scientifically unverifiable, to say the least.

The naturalization of epistemology is liberating for the epistemologist since now he can have "free access to the resources of natural science without fear of circularity."[90] According to this new program, natural science is intimately linked to epistemology and since one cannot be separated from the other, it is not necessary to justify the usage of science, before doing so. In other words, in the same way that an applied scientist is not required to justify the usage of science to study and advance his research, the epistemologist is not required to justify the usage of science to study the acquisition of science. Similarly, in the same way that the scientist uses science to advance or invent new technology, the epistemologist, under this new program, is permitted to use science to advance epistemology, the technology of truth-seeking. Therefore, from this perspective, the issue of circularity does not have a place in Quinean epistemology.

[89] Quine, "Epistemology Naturalized," p. 83.
[90] W. V. Quine, and Roger F. Gibson. "Naturalism; or, Living within One's Means," p. 281.

Concluding Remarks

When Quine states, "epistemology, or something like it,"[91] he indicates to his readers that he is aware that his new program is not identical to the old program. Darwinian biology is something like Aristotelian biology, in the sense that they are both biology, but they are different in some of their fundamental tenets. Einsteinian physics is something like Newtonian physics, in the sense that they are both physics, but they are not identical to one another with regard to certain central principles. In the same sense that we cannot evaluate Darwinian biology or Einsteinian physics based on Aristotelian criteria and definitions, we cannot evaluate naturalized epistemology based on the principles and definitions of traditional epistemology. Similarly, in the same sense that we no longer use Platonic or Aristotelian forms in explaining physical or biological events, Quinean epistemology does not make use of any traditional criteria and conditions, which are beyond the framework of natural science. Quine, through his holism and unregenerate realism, rejects the employment of a priori reasoning or analytic statements to set norms and standards. He considers the thought of doing so, a dream or an illusion. Through his holism, he refutes the analytic-synthetic distinction, as well as empirical or radical reductionism. Subsequently, he replaces old methods of analysis with his new ones under the guidelines of unregenerate realism.

Quine's epistemology focuses on "the question how we human animals can have managed to arrive at science from such limited information."[92] He views this question as a scientific question and pursues its answer the way scientists pursue scientific hypotheses. In his new program, the scientific epistemologist pursues the answer to the preceding question and "comes out with an account that has a good deal to do with the learning of language and with the neurology of perception. He talks of how men posit bodies and hypothetical particles, [...]

[91] Quine, "Epistemology Naturalized," p. 82.
[92] Quine, "Five Milestones of Empiricism," p. 72.

Evolution and natural selection will doubtless figure in his account, and he will feel free to apply physics if he sees a way."[93]

According to Quine, the central contrast between the old and the new epistemology is that "the naturalistic philosopher begins his reasoning within the inherited world theory as a going concern. He tentatively believes all of it, but believes also that some unidentified portions are wrong. He tries to improve, clarify, and understand the system from within. He is the busy sailor adrift on Neurath's boat."[94] This is the mindset of a scientist, who is not struggling with any philosophical insecurity.

Quine's transformation of epistemology liberates the philosopher to use science and reap its benefits, without being concerned about philosophical questions and issues that may surround science. Nevertheless, like any new theory that enters the scene, Quine's theory is heavily criticized. In the next chapter, I will present the most potent objection against Quine's epistemology, namely, the normativity objection and evaluate Quine's actual and potential responses to it.

[93] Quine, "Five Milestones of Empiricism," p. 72.
[94] Quine, "Five Milestones of Empiricism," p. 72.

3. The Normativity Objection

In the previous chapter I briefly introduced the motivations for and basic elements of Quinean epistemology. However, Quine's new vision needs to remain standing in the face of objections. One, and perhaps the most famous and potent, objection against Quine's naturalization of epistemology revolves around the place of normativity in his epistemology.

In this chapter I will begin by explaining normativity and stating the core of the normativity objection. I will then present Quine's actual and potential responses to this objection. To do so, I will first reveal Quine's outlook on truth and science. Quine's view of truth is Tarskian and his understanding of science is not limited to scientific methodology. How Quine views science and truth complements his response to the normativity objection. Quine considers normative epistemology to be similar to engineering or applied sciences. Specifically, Quine maintains that as epistemology gets naturalized into science, the normative questions of traditional epistemology become questions of effective epistemic engineering. Thus, for Quine, normative epistemology is "a chapter of engineering: the technology of anticipating sensory stimulation."[95] Quine does not reject normativity; rather, he holds that normative epistemology, via being extracted from and guided by sciences, informs us *how* we ought to, most effectively, pursue truth. Therefore, for Quine, normative epistemology as engineering makes room for a perfectly legitimate form of normativity.

Nevertheless, in this chapter I will indicate that there are, in fact, a number of different possible versions of the normativity objection; and while Quine is able to address many, there are some versions to which his engineering model does not provide a satisfactory reply. I conclude

[95] W.V. Quine, *Pursuit of Truth*. Cambridge, Mass.: Harvard University Press, 1990. p. 19.

this chapter with a critical overview of a potential Quinean response to the categorical normative objection, the most potent version of the normativity objection.

Prescriptive Versus Evaluative Normativity

To better understand Quine's epistemology, we would do well to clarify the concept of normativity. Principles or statements may be normative in at least two distinct ways, evaluative and prescriptive. Evaluative statements or principles are utilized to assess or rank propositions or beliefs based on a set of criteria. An evaluative normative statement may be used to rate a proposition or a thing as good or bad, right or wrong. Evaluative statements register the subject's approval or disapproval of a proposition or a thing. For example, "volunteering in seniors home is good" and "interrupting others while they are speaking is wrong" are normative evaluative statements.

Both normative prescriptive and normative evaluative statements express one's attitude towards a proposition, rule, or course of action. However, the normative prescriptive statements indicate the right path to take; what should or should not be done. For example, "young individuals should respect the elderly" and "you should be gentle when you speak" are normative prescriptive statements. Unlike evaluative statements, prescriptive statements do not rank available options, *explicitly*. Ultimately, all normative statements, either prescriptive or evaluative, are action-guiding or belief-guiding; they recommend to the subject to accept a belief or commit an action. It is this guiding force within normative statements that sets them apart from descriptive statements. Descriptive statements, in contrast, by describing *how* things are, do not persuade the subject in any specific direction.

For instance, the statement or proposition that "one ought not to do drugs" guides the individual to not do drugs. The statement "drugs harm the body" lacks this guiding element, as it does not inform the subject how to respond or react to this statement. The former statement is a prescriptive normative statement, whereas the latter is a descriptive statement. To link or bridge the former to the latter, a rule or a principle is required. For example, "one ought not to do what harms the body." This general principle is a normative principle; it justifies the former normative statement. Epistemology's function has traditionally been to supply justificatory principles in order to guide individuals in their adoption and rejection of beliefs. Beliefs that are justified ought to be adopted and beliefs that are unjustified ought to be rejected. An example of a common *epistemic* principle would be that "one ought to believe in accordance with the evidence that one possesses." By relying on this epistemic principle, individuals adopt the beliefs that are supported by evidence and reject those that are not. According to the traditionalists, these types of normative justificatory principles cannot be produced via naturalized epistemology or through causal connections. Quine, on the other hand, rejects this traditionalist view.

The Core of the Normativity Objection

Jaegwon Kim, one of the most well-known and vocal critics of Quinean epistemology, states: "the difference that matters between Quine's epistemological program and the traditional program is the former's total renouncement of the latter's normativity, its rejection of epistemology as a normative inquiry."[96]

For Kim, "justification is what makes knowledge itself a normative concept."[97] If justification is not a normative notion, then knowledge is not either. If knowledge is not a

[96] Jaegwon Kim, "What is "Naturalized Epistemology?"" *Philosophical Perspectives* 2 (1988). p. 397.
[97] Kim, p. 383.

normative notion, then it can be neither action- nor belief-guiding. Thus, according to Kim, "... justification manifestly is normative."[98] This view of justification contradicts what he takes the naturalistic view of justification to be. Justification in the naturalistic realm, according to Kim, is "characterized in terms of causal or nomological connections involving beliefs as *psychological states* or *processes.*"[99] Causal and nomological cognitive connections lack any prescriptive power and merely describe *how* the human subject forms beliefs. They do not and cannot evaluate beliefs to show *why* some beliefs ought to be chosen over others or *why* some beliefs are justified whereas others are not. According to Kim and other traditional epistemologists, one of the integral tasks of epistemology is precisely that: to evaluate beliefs according to specific justificatory principles. For Kim, justification "is the only specifically epistemic component in the classic tripartite conception of knowledge. Neither belief nor truth is a specifically epistemic notion."[100] Whereas the notions of truth and belief may be examined and explained in other philosophical or non-philosophical domains, it is only the discipline of epistemology that can be and has always been concerned with the notion of justification. If Kim is right about this, then the removal of justification and normativity from epistemology would lead to the collapse of epistemology's essence or raison d'etre.

If epistemology is void of justification or if it lacks normativity, if it is only concerned with *how* beliefs are formed and not *why* some beliefs are justified and rational and some others are not, without a meaningful way to separate rational and justified beliefs from irrational and unjustified beliefs, then the notion of rationality itself would collapse. According to Kim, "if a belief is justified for us then it is *permissible* and *reasonable*, from the epistemic point of view,

[98] Kim, p. 383.
[99] Kim, p. 396.
[100] Kim, p. 383.

for us to hold it, and it would be *epistemically irresponsible* to hold beliefs that contradict it."[101] For Kim, since 'justification' is a normative term, it is "the business of epistemology to identify and analyze the conditions under which beliefs, and perhaps other propositional attitudes, are justified from the epistemological point of view."[102] Descriptive sciences cannot perform such tasks. Thus, since naturalized epistemology is considered to be a chapter of descriptive sciences, it cannot identify justification and it cannot be normative.

Hilary Putnam agrees with Kim that justification is normative and cannot be eliminated or reduced to psychology but he takes a different route to criticizing Quine's naturalized epistemology. Putnam compares naturalized epistemology to cultural relativism. In his view the doctrines of both are products of "deference to the claims of Nature,"[103] and they both have the "desire for harmony with the world-version of some science."[104] This comparison is worrisome for Putnam, since he believes that there is a "deep irrationalism to cultural relativism, a denial of the possibility of thinking."[105] By arguing strongly against relativism, and sternly emphasizing that it is inconsistent and by linking it to "cultural imperialism,"[106] Putnam sets the stage for rejecting naturalized epistemology. For Putnam, the task of epistemology "is not to mechanically *apply* cultural norms ... but to interpret them, criticize them, to bring them and the ideals which inform them into reflective equilibrium."[107] It is unacceptable for Putnam that naturalized epistemology, ultimately, dictates that beliefs and propositions that are drawn from science are justified, without providing any opportunity or means to examine, affirm or reject them. Putnam states that if we remove the normative concepts of epistemology, "if one abandons the notion of

[101] Kim, p. 383.
[102] Kim, p. 383.
[103] Hilary Putnam. "Why Reason Can't Be Naturalized." *Synthese* 52.1 (1982). p. 9.
[104] Putnam, p. 9.
[105] Putnam, p. 9.
[106] Putnam, p. 12.
[107] Putnam, p. 14.

justification, rational acceptability, warranted assertibility, right assertibility, and the like, completely, then 'true' goes as well …"[108] Putnam warns that without the notion of "true" or "rightness", statements are mere "noise-makings" and thinking, "mere subvocalizations."[109]

For Putnam, Quine's epistemology cannot perform the task of epistemology, due to Quine's position on truth. According to Putnam, Quine's notion of truth is Tarskian. "Tarski simply defines 'true' so that 'p is true' will come out equivalent to 'p'."[110] In other words, for Tarski, saying that a statement is true is "equivalent to assenting to that statement."[111] For Quine, "to call a sentence true is just to include it in our own theory of the world."[112] The famous example that Putnam uses to simplify Tarski's point is the statement "snow is white." If I state that "snow is white" is true, I am stating that "snow is white." Similarly, if I utter "snow is white," I hold the belief that "snow is white" is true. In short, according to this position, the statements that I assent to represent the beliefs that I hold to be true. From this perspective, according to Putnam, for Quine, truth is whatever Quine would (or could) accept truth to be.

This position troubles Putnam. Based on his take on Quine, he views Quine's normative epistemology to be searching "for methods that yield verdicts that one oneself would accept."[113] In this sense, Quinean epistemology is extremely close to the type of relativism that Putnam stringently argues against. In Quine's epistemology norms cannot be assessed transcendentally, and they are bound to the culture or the theory from which they emerge. Quine's epistemology

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[108] Putnam, p. 20.
[109] Putnam, p. 20.
[110] Putnam, p. 19.
[111] Putnam, p. 19.
[112] W. V. Quine, Dagfinn Føllesdal, and Douglas B. Quine, *Quine in Dialogue*. Cambridge, Mass.: Harvard University Press, 2008. p. 242.
[113] Putnam, p. 20.

lacks transcendence. Conversely, for Putnam, "the rightness and wrongness of what we say is not *just* for a time and a place."[114]

We readily and intuitively accept that it is rational to hold true beliefs and irrational to hold false beliefs. The process of thinking demands for some kind of a transcendental method, for evaluating truth or correctness, to exist. The objective of the thinking process is to consciously distinguish right from wrong or good from bad. If truth or justifiedness or rational acceptability were what each individual could accept it to be at any moment, or assent to, then thinking would not be required, since the process of evaluation would not be necessary.

Putnam asks, "why should we expend our mental energy in convincing ourselves that we aren't thinkers? ... This is a self-refuting enterprise if there ever was one!"[115] From Putnam's viewpoint, it would, ultimately, be an "attempted mental suicide"[116] to eliminate transcendental rightness and wrongness and normative concepts from epistemology.

To sum up this section, there are different versions of the normativity objection, most of which stem from the notion that justification is a normative concept and normativity is the central axis of epistemology. According to Quine's critics, epistemology is a normative discipline, "whose principal aim is a systematic study of the conditions of justified beliefs."[117] The critics emphasize that Quine's new program eliminates normativity from epistemology. Therefore, according to them, Quine's naturalized epistemology is not epistemology at all. This is the core of the normativity objection against Quinean epistemology. In short, it is argued that a

[114] Putnam, p. 21.
[115] Putnam, p. 21.
[116] Putnam, p. 20
[117] Kim, p. 383.

naturalized approach to epistemology "fails to be epistemology because it fails to retain epistemology's normative dimension."[118]

In his original paper, "Epistemology Naturalized," Quine did appear to be recommending the abandonment of normativity. However, in his later works, he denies that naturalized epistemology abandons normativity, and insists that his engineering model makes it clear that naturalistic epistemology can indeed be normative. In what follows, I will, first, introduce Quine's engineering approach to normative epistemology. After that, I will set out a number of specific versions of the normativity objection, and consider the strengths and weaknesses of Quine's position in responding to each.

Science, Technology and Quine's Normative Epistemology

Since Quine has repeatedly and explicitly stated that his naturalism does not repudiate epistemology, he must either have a different understanding of justification and normativity or he must think that justification and normativity do not have any place in epistemology. If he does not deny that justification belongs to epistemology, then his understanding of it must somehow locate both normativity and justification within the framework of natural science.

As stated in the previous chapter, in Quinean epistemology, epistemology and natural science reciprocally contain one another, whereas in traditional epistemology, only epistemology contains natural science. Normative epistemology, according to Quine, is a technology; a technology that emerges from science. In the old program, by contrast, epistemic theories of justification may be shaped via conceptual analysis alone, outside of natural science. In other words, traditional epistemology is not dependent, strictly, on science to form its theories,

[118] Jack S. Crumley, "Naturalized Epistemology," *An Introduction to Epistemology*. Mountain View, Calif.: Mayfield Pub., 1999. Print. p. 196.

whereas in Quine's approach, epistemology is strictly dependent on science; it is formed and re-formed, solely based on scientific knowledge or a scientific world view. In Quine's view, epistemology cannot be located outside of science and it subsists on science.

In Cartesian foundationalism, which was a prominent theory within traditional epistemology for centuries following Descartes, a theory could be produced through the first-philosophy approach. Subsequently, that theory could be utilized to develop further theories, even empirical scientific theories. This task would be accomplished in two stages. First, justificatory principles would be formulated without any reliance upon or examination of empirical theories. Second, these principles would be used to separate justified scientific propositions from unjustified scientific propositions without any actual need to perform any empirical investigation. According to this Cartesian approach, if a proposition cannot be justified, solely based on the knowledge that is independent of any empirical information, then that proposition cannot be used in natural science or justifiably held by scientists.

Quine considered this approach of formulating a scientific theory without actually performing any scientific experiments, a moribund endeavour. It was, indeed, this Cartesian approach which Quine mistakenly took to be the representative of all forms of traditional epistemology. In turn, it triggered him to seek and formulate a completely new approach to epistemology. Unlike the Cartesian approach, in Quine's naturalized program, any new proposition is viewed as a new scientific hypothesis; it is by default placed and examined within the realm of natural science, first and foremost. The purpose of this scientific or empirical examination of any new proposition is to ensure that this new proposition has a proper place within the natural framework, corresponds to the external physical world and can be assessed scientifically. For example, propositions that are produced as a result of clairvoyance or

divination do not have any place in the natural framework. Scientific and empirical examinations of such propositions are not feasible. Consequently, in Quine's new program, any belief as a result of divination or clairvoyance is epistemically unjustified and rejected.

The empirical examination of each proposition *prior to* its entrance into our world theory does not contradict Quine's holism, which rejects the examination of each sentence *within the theory,* independent of the theory itself. The former process examines a proposition or a sentence before it enters our theory, whereas the latter process demands examination of each sentence or proposition after it has already been accepted to be part of our theory. For Quine, any sentence or proposition that enters our theory of the world, following the assessment of scientists, is considered true and justified. It is questioning the justifiedness of each sentence within our theory that Quine's holism rejects.

Quine's approach introduces a new epistemically justified manner to construct and enhance our world theory. Our theory of the world is completely within the natural framework. As we construct our theory, we must be cautious regarding what enters it. A checkpoint must be placed for each proposition or sentence before it enters. This checkpoint, for Quine, is science. His approach ensures that our theory is explainable and examinable by science. As a result, this approach keeps, for example, propositions based on clairvoyance from entering our theory.

Constructing and Enhancing Our Theory of the World

To construct an epistemically justified theory of the world and to enhance it, Quine conveys a process, which reflects the reciprocal containment of ontology and epistemology in his approach. The scientist and the naturalized epistemologist have access only to propositions and sentences that are located within the natural framework. *The scientist works to expand our theory of the*

world, and the epistemologist works to enhance our theory of the world. The sentences and propositions that are permitted to be part of our theory, by the scientist, are considered justified and true. However, they are not necessarily correct. Subsequently, the normative epistemologist, by utilizing the available information, extracts epistemic principles to improve our theory by correcting the mistaken propositions and sentences within it.

For Quine, the whole of natural science "is our own construction or projection from stimulations"[119] and the task of epistemology is to study the whole of natural science, to analyse our constructed and projected theory of the world.[120] As a result of such study, patterns may be observed, which can, in turn, lead to formation of principles. Furthermore, errors in our constructions and projections may appear, too. This is where Quine's normative epistemology enters the picture and where his engineering approach applies. Quine states, "podiatry and appendectomy, and the surgical repair of hernias are technological correctives of bad side effects of natural selection, and such also in essence is normative epistemology in its correcting and refining of our innate propensities to expectation by induction."[121] A surgeon, performing appendectomy, following his studies of the problem, knows *how* he ought to proceed to remove the appendix or to correct the problem. Similarly, a normative epistemologist, following the study of our theory, learns *how* he ought to proceed to correct and enhance it. For a naturalized normative epistemologist to correct our world theory, and, ultimately, to engineer a correct vision of our world for us, he must formulate and rely on normative principles.

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[119] W. V. Quine, "Epistemology Naturalized," in *Ontological Relativity, and Other Essays.* New York: Columbia University Press, 1969. p. 83.
[120] W. V. Quine, *From Stimulus to Science*. Cambridge, Mass.: Harvard University Press, 1995. p. 16.
[121] Quine, *From Stimulus to Science*. p. 50.

In Quine's approach, ontology is contained in epistemology. Quine refers to this type of containment as the "old containment" and considers it "valid."[122] The normative epistemologist seeks and corrects errors in order to, ultimately, construct a theory that accurately reflects the natural world. It is in this sense that our ontology is contained in our epistemology. Furthermore, the normative epistemologist examines our world theory to see how propositions and sentences could be corrected in order to increase the precision of our predictions. Correctness of our theory is linked to the accuracy of our predictions; the more correct our theory is, the more accurate our predictions will be.

To better understand what Quine has in mind it may help to imagine the task of a civil or a construction engineer, who, following the request of city councillors, plans to renovate a city's highway system to unclog the daily traffic jams. To improve or build a highway system, building materials are required. Depending on various environmental factors, different building materials are ideal for different highway projects. There may be building materials that are never ideal for building a highway system. The task of the engineer is to, efficiently, improve and develop a highway system to serve a specific purpose. However, there are many tasks, such as urban planning, that fall beyond his responsibilities and on the shoulders of other specialists. These specialists evaluate the project and provide the engineer with the correct materials and maps that he may need in order to construct an efficient highway system. Without the research and guidance of other specialists this project cannot be undertaken safely. Employing insufficiently sturdy and unsuitable building materials may lead to the collapse of the highway system in the near future; or alternatively, it may lead to the construction of a very expensive, but secure, system. An inefficient system, though still a system, may lead to terrible traffic jams, and

[122] W. V. Quine, "Epistemology Naturalized," p. 83.

ultimately, lead to more problems than solutions. In short, to successfully accomplish the task of building a safe and an efficient highway system, the specialists and the engineer need to complement one another. They each play a crucial role in serving a shared ultimate end.

Similarly, in Quine's naturalized epistemology, first, scientists work to prepare the grounds for the normative epistemologists to perform their tasks. Scientists examine propositions and beliefs that are the building blocks of our knowledge superstructure or our world theory in order to assess whether they fall within the natural framework. Subsequently, normative epistemologists work with the scientifically-approved propositions and beliefs to amend and shape our theory of the world. Like the engineer, the normative epistemologist is responsible for building and renovating a superstructure with the building blocks that are available to him. Like a highway system, our knowledge system, is corrigible and may change according to the latest relevant scientific discoveries. Its safety and efficiency require frequent re-inspections.

Quine's Knowledge Theory is a Superstructure

According to Quine, all objects are theoretical posits. "Even our primordial objects, bodies are [...] theoretical."[123] Through time we form a "network of hypotheses that we have internalized little by little in the course of acquiring the non-observational superstructure of our language."[124] Observations upon which science relies, scientific outputs, objects, and values of variables, all serve as means to preserve this "sentence-to-sentence structure."[125] This superstructure serves as the axis of Quine's naturalism. It is Quine's scientific system, Quine's theory of the world and Quine's knowledge theory. "[It], ontology and all, is a conceptual bridge of our own making,

[123] W.V. Quine, "Things and Their Place in Theories." in *Theories and Things*. Cambridge, Mass.: Harvard University Press, 1981. p. 20.
[124] Quine, "Things and Their Place in Theories." p. 20.
[125] Quine, "Things and Their Place in Theories." p. 20.

linking sensory stimulation to sensory stimulation."[126] It assists in the recognition "that it is within science itself, and not some prior philosophy, that reality is to be identified and described."[127] This sentence-to-sentence superstructure is our ever-expanding knowledge theory within the natural framework. It forms as a result of basic observations and expands through science. Anything inside of it is science and anything outside of it is not epistemically justified.

To better understand Quine's knowledge superstructure or theory of the world, we may use the analogy of a web of beliefs, where all beliefs are interconnected via a network. The outermost peripheral strings are connected to the innermost strings via multiple intermediary strings. Similarly, in Quine's superstructure all theoretical and observation sentences are interconnected. The outermost sentences are observation sentences and the non-peripheral sentences are theoretical sentences, indirectly linked to observations. The further a sentence is from observation sentences or from the outer periphery, the more theoretical it would be. As it was mentioned in Chapter Two, for Quine, language and empirical facts are advanced versions of observation sentences and observations. Observation sentences are automatic reactions to observations. The peripheral boundary of our world theory is composed of observation sentences as a result of direct observation. Based on this approach Quine indicates that the foundations of our theory are natural and based on empirical facts, and the language of our theory is rooted in observations. Unlike a spider web, the Quinean web of beliefs is constructed from outside towards the inside. Observation sentences and empirical facts form the foundations or the outermost parts of our theory and initiate its advancement. As the theory advances new sentences and new empirical observations are added. They cohere with the natural foundations of the theory. Upon these newly-added sentences, more sentences and observations are built. This is

[126] Quine, "Things and Their Place in Theories." p. 20.
[127] Quine, "Things and Their Place in Theories." p. 21.

how Quine's knowledge superstructure or sentence-to-sentence structure or theory of the world is constructed and evolves.

To further simplify the case, consider the following proposition as an example: "The human brain functions like a computer." According to the traditional program, if this proposition fits within a coherent doxastic system, or if it is inferred from basic beliefs, or if it is produced via a reliable process, then it is justified. Scientific confirmation or disconfirmation of this proposition may be a contributing factor to the final decision, but it is not the final decision itself. In the old program, the scientist does not do epistemology; nor does the epistemologist do science. Rather they work *in parallel* with one another. Conversely, in Quine's epistemic program, there is *a linear relationship* between the scientist and the normative epistemologist. The scientist precedes the normative epistemologist. It is the scientist that determines whether a proposition or a belief falls within the natural framework and not the epistemologist. If it does, it is justified and true, if it does not it is unjustified and false. Quine's epistemologist, in turn, works with justified beliefs and propositions in order to correct and enhance the theory of the world. As the theory enhances, the scientist becomes better equipped to determine the justifiedness of propositions and beliefs. From this perspective, it may be stated that they both share the role of identifying justified beliefs and propositions. They contribute to the task of identifying justifiedness from two different angles.

From another perspective, when a proposition or a belief fails to enter our theory, it becomes irrelevant whether it is examined on its own, afterwards; because it is an unjustified belief or proposition to begin with. As stated previously, Quine's holism applies *within* the natural framework, and whether something is within the natural framework or not is a verdict given by the scientist. Thus, in the new Quinean program, the aforementioned example must,

first, be examined by scientists, cognitive scientists in this case, to see if it corresponds with the natural reality. If it does correspond with reality, if the human brain is, indeed, like a computer, only then, this proposition may enter our theory and be considered justified. At this point the normative epistemologist would evaluate it to see how it ought to be understood or how it may contribute to helping us improve the accuracy of our predictions. This proposition may help to either confirm our views regarding the human brain or it may re-adjust or amend our previous opinions about it. Either way, the correct understanding of this proposition takes us one step closer to making accurate predictions. The abovementioned example helps to clarify that although the tasks of scientists and normative epistemologists complement each other, in the Quinean program, they do not do so in parallel. The epistemologist studies a proposition or a belief only after a scientist has allowed it into our theory.

If the stated proposition, "the human brain functions like a computer" is not approved by cognitive scientists, then any system or theory that relies on it or takes it into account would be considered weak or flawed. In Quine's program, the disapproval of the scientist is sufficient to prevent the giving of any epistemic value to a proposition, and to stop it from any further epistemic examination. To employ a valueless proposition would be considered epistemically irresponsible. In contrast, the traditional epistemologist neither consults the scientist to determine what the correct epistemic principles ought to be nor sets it as an explicit epistemic principle that for a proposition to be justified it ought to be approved by scientists, first. For this reason, the justifiedness of propositions do not necessarily require the initial inspection of scientists. The absence of such epistemic principle may result in non-natural propositions or beliefs to pass the justificatory criteria and be considered epistemically justified, in the old program. A naturalist or a naturalized epistemologist takes issue with a proposition that is considered justified,

epistemically, yet falls beyond the natural framework. The linear approach of the Quinean naturalized epistemology guarantees that non-natural propositions or beliefs are not considered epistemically justified.

Justificatory Principles, Justified Beliefs and Neurath's Boat

An objection may appear at this point. It may be argued that even in the old program the scientist could always tell the epistemologist how a given belief was arrived at; whether it coheres with the rest of our natural evidence or whether it is a result of a natural process or whether it is based on basic natural beliefs. Furthermore, it may be added that the task of epistemology is formulating epistemic *principles* and defining justification. A traditional epistemological theory, on its own, does not determine which *specific* beliefs are or are not justified. It only informs what is required for such.

One way that Quine could respond to this objection would be through his unregenerate realism. A natural scientist that is neither bothered by philosophical qualms nor is involved in epistemic endeavours is capable of determining whether a proposition is scientifically justified; meaning whether a proposition is well-supported by other facts and experiments. Therefore, from this perspective, knowing about the justifiedness of propositions or beliefs is not exclusive to epistemologists. This fact implies that there are criteria or principles outside of those that are set and found by epistemology that are employed by non-epistemologists to determine the justifiedness of propositions.

For Quine, justifiedness entails being within our best scientific theory of the world. For the scientist, and Quine's epistemologist, the criteria that permit entrance of propositions or beliefs into our world theory are scientific criteria that are learned through centuries and decades

of observations, scientific experiments and trials-and-errors. Our collective human sentence-to-sentence knowledge structure or our theory of the world is constructed through centuries of empirical observations and trials-and-errors. The Quinean epistemologist accepts the scientist's criteria as valid and legitimate. He realizes that it has worked superbly in the case of scientific advancement and thus, considers it epistemically valuable. The justificatory criteria that scientists have used and use, clearly, allow for the expansion of our knowledge theory and ultimately take us closer to predicting the external, natural world more accurately.

Quine brings to attention these inherited corrigible and evolving justificatory principles that have guided science for centuries, and lets his epistemologist take credit for their evolution. His epistemologist studies our world theory or our science. He sees how our knowledge superstructure or our theory of the world is formed and he searches for ways to enhance its progress. He finds ways to improve our world theory and principles to abide by. As our ontology swells, our principles improve. From this perspective, there is a direct relationship between the enhancement of our principles and the enhancement of our theory. In short, Quine's epistemologist uses science and scientific methodology to enhance both of them further.

In neither the traditional approach nor the Quinean approach do the epistemologist and the scientist compete against one another. However, in Quine's naturalism they are both within the same framework and possess the same natural means and information.

For Quine, we are always on Neurath's boat and we do not have a choice but to work with what we have on our boat. We cannot step off of this boat. To advance, we must build on what we already have available to us. On this boat, at any time, we already have a set of

justificatory principles and a theory of the world; justificatory principles that are used by scientists to develop a theory about the world.

Science, according to Quine, is "a continuation of common sense. And it continues the common-sense expedient of swelling ontology to simplify theory."[128] Our common sense is endowed upon us by the evolutionary process of natural selection.[129] Quine considers our common sense to be rudimentary physical science.[130] On Neurath's boat, we start with our common sense and from and through it we arrive at rudimentary justificatory principles. As this boat floats, using the world theory that is available, scientists make more observations and become more informed regarding our world. Quine's epistemologist, also, begins with the same available principles and the same world theory, and seeks ways to enhance them. To do so, he works closely with the scientist on the boat. As our theory swells, via observations and experiments, the epistemologist monitors its evolution. He takes from our theory what he needs to improve the old justificatory principles and to form new ones. Subsequently, he applies the newly enhanced and formed principles to correct and sharpen our theory. In turn, this sharpened and corrected theory will be more effective in scientific experiments and observations. Together, through this progressive loop, the scientist and the epistemologist enhance and advance our knowledge superstructure or our knowledge theory. In a nutshell, there is a positive feedback loop in Quine's program. Our theory of the world is used as an instrument to formulate epistemic principles, which are in turn used as instruments to correct and enhance our theory of the world.

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[128] W. V. Quine, "Two Dogmas of Empiricism," in *From a Logical Point of View: 9 Logico-philosophical Essays*. 2d ed. Cambridge, Mass.: Harvard University Press, 1980. p. 45.
[129] W. V. Quine, and Roger F. Gibson, "The Nature of Natural Knowledge," in *Quintessence: Basic Readings from the Philosophy of W.V. Quine*. Cambridge, Mass.: Belknap Press of Harvard University Press, 2004. p. 290.
[130] Quine, and Gibson, p. 290.

For Quine, Truth is Constructed

In his writings, Quine explicitly states: "naturalization of epistemology does not jettison the normative and settle for the indiscriminate description of ongoing procedures."[131] He considers normative epistemology a "technology of truth-seeking, or in a more cautiously epistemological term, prediction."[132] This technology may make "use of whatever scientific findings may suit its purpose."[133] For Quine, once truth-seeking or the expansion of our world theory is selected as the goal, space is created for genuine normativity within his epistemology.

Quine's decision to select truth-seeking as his epistemic goal directly runs contrary to Putnam's concern that Quine's epistemology eradicates truth from epistemology. However, does Quine's version of truth properly address Putnam's argument? Putnam is concerned that we ought to have transcendental truths. In the absence of such truth, there would not be any rational basis for accepting or rejecting propositions or beliefs outside of our current selves or our culture. He is concerned that without transcendental truth, rightness becomes meaningless or a mere hollow verbal assent.

Both Quine and Putnam emphasize the significance of truth, and Quine explicitly denies that his epistemology eradicates normativity. However, regarding issues pertaining to truth, they are talking past one another. According to Putnam, to be thinkers, we require normative notions such as rationality and justification. We use these epistemic concepts to evaluate propositions and beliefs and to reach truth. In short, for Putnam, we employ normative epistemic principles to take us to truth. However, according to Quine the opposite is the case. For him, our theory of the

[131] W. V. Quine, Lewis Edwin Hahn, and Paul Arthur Schilpp. "Reply to Morton White," in *The Philosophy of W.V. Quine*. La Salle, Ill.: Open Court, 1986. pp. 664-665.
[132] Quine, Hahn, and Schilpp, p. 664-665.
[133] Quine, Hahn, and Schilpp, p. 664-665.

world *is* our truth, which is our own construction and projection as a result of our observations and experiences. At any moment, we are bound to a theory. Our world theory is our truth, and we cannot step outside of this theory, to evaluate it transcendentally. In other words, we cannot unbind ourselves from the truth that is available to us. Given that our truth is present to us at all times, we can examine it to extract our epistemic principles from it. In turn, as stated above, we utilize these extracted principles to enhance our truth or our theory.

Quine's understanding of truth is that of a philosophically-naive scientist. According to Quine, "truth is immanent, and there is no higher. We must speak from within a theory, albeit any of various."[134] By 'immanent', Quine means that there is not any extra-theoretical vantage from which we could judge the sentences or propositions within our theory. By theory Quine means "*our own* theory of the world,"[135] and by "our own" he implies "our best scientific theory of the time."[136] He disavows "any higher tribunal than our best scientific theory of the time."[137] He, further, clarifies his position on truth and its immanence and states, "I view 'true' as a predicate within science; second-order, yes, like 'sentence' or 'phoneme', but not transcendent. When we find to our surprise that an accepted sentence was not true, this is on par with finding to our surprise that light rays are not straight."[138] To discover our mistake about light rays we did not need to step out of our physics' theory of light or optics. It was from within the very same theory that discovered and described light rays in the first place that we, later on, due to our scientific advancements, were able to notice our mistake. Similarly, for Quine, truth is affirmed and asserted by science. The correctness of propositions or sentences ought to be evaluated from

[134] W. V. Quine, "Things and Their Place in Theories," in *Theories and Things*. Cambridge, Mass.: Harvard University Press, 1981. p. 22.
[135] W. V. Quine, Dagfinn Føllesdal, and Douglas B. Quine. *Quine in Dialogue*. Cambridge, Mass.: Harvard University Press, 2008. p. 242. [emphasis mine]
[136] Quine, Føllesdal, and Quine, p. 242.
[137] Quine, Føllesdal, and Quine, p. 242.
[138] Quine, Føllesdal, and Quine, p. 226.

within science. When "science is self-applied,"[139] or when we do Quinean epistemology, mistakes within our theory of the world are discovered and, in turn, amended.

For Quine, there is only the natural framework, and within it our best theory of the world is constantly swelling. Quine is not concerned about the outside of this natural framework, since he does not recognize its existence. Hence, he dismisses worries that are rooted in the non-natural framework. Quine states, "we must [...] limit the ascription of truth to whichever theory formulation we are entertaining at the time, for there is no wider frame of reference."[140] For him, there is only one true theory of the world, our best scientific theory of the world. Any attempt to evaluate or criticize our world theory from an unscientific standpoint or from a non-natural framework is a non-starter. The only type of criticism that Quine sees as valid is similar to that of two scientists; they have disagreements, yet they both do science and argue via a scientific discourse. Therefore, the only way that our theory *can* be assessed is from within.

For Quine, to be able to "*call* a sentence true is just to include it in our own theory of the world."[141] For him, for a sentence to be true it ought to be within our knowledge superstructure or our world theory. However, this requirement is only for being able to *call* a sentence true. *Calling* a sentence true does not entail that it is correct. He states, to include a sentence in our science "is not to say that science fixes truth."[142] In other words, to *consider* a sentence as true, it has to be acceptable by science. However, not every sentence that enters our theory is correct or optimal. Simply being in our world theory does not guarantee the correctness of a sentence or a proposition. It is at this point that normative epistemology, or science self-applied, is applicable.

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[139] W. V. Quine, Dagfinn Føllesdal, and Douglas B. Quine, "The Interview: Williard Van Orman Quine," in *Quine in Dialogue*. Cambridge, Mass.: Harvard University Press, 2008. p. 24.
[140] W. V. Quine, "Empirical Content," in *Theories and Things*. Cambridge, Mass.: Harvard University Press, 1981. p. 29.
[141] Quine, Føllesdal, and Quine, p. 242.
[142] Quine, Føllesdal, and Quine, p. 242.

Thus, it ought to be highlighted that Quine does not view truth and correctness, equally. "True" is any statement or proposition that enters our theory. A statement may not be correct but it is true if it is approved and within our best scientific theory of the world at the time. Quine's epistemologist aims to correct and enhance our theory of the world. He discovers our incorrect statements and beliefs, and either removes them or corrects them. Quine's position on truth may not be common or intuitive. Commonly, or often, truth is understood to be categorical or universal. This common or intuitive view of truth may be behind Putnam's objection against Quine's epistemic program.

For Quine, our knowledge superstructure or our theory of the world is the only lens we have, at all times, through which we see and understand the world. As it evolves, so does our comprehension of it. Truth, in Quine's naturalism is a broad notion. It is anything that is within our knowledge superstructure at the time. Quine sees true beliefs and our knowledge superstructure as tools that we have at our possession. His normative epistemologist uses these tools to extract and develop epistemic principles from our world theory in order to enhance it. With a clearer lens we can see farther. The more enhanced our theory is, the higher the quality and the quantity of our scientific advancements will be.

Hypothetical Normativity Readily Complements Quinean Truth

In Quine's naturalism, truth is hypothetical; in his epistemology, norms are hypothetical. Hypothetical truths and norms have instrumental value. They are only valuable or justified if they serve a purpose or pertain to a certain goal. Conversely, categorical truths and norms are intrinsically valuable. They are valuable or justified independent of any end, goal or purpose.

In a recent paper, Chase B. Wrenn makes a clear distinction between hypothetical and categorical epistemic normativity.[143] This distinction is apparent when one attempts to answer the following questions, "why are justified beliefs better?" and "why ought our beliefs to be justified?" According to Categoricalism, justified beliefs, have *intrinsic* epistemic value or are *intrinsically* justified. Their justifiedness is not meant to serve as means to another epistemic end. Quine understands Categoricalism to mean that beliefs are justified, within or without any given theory. This view stands in stark contrast to his theory. In Quinean epistemology, beliefs cannot be evaluated from outside of our theory. Thus, to claim that some beliefs can be justified outside of our theory does not hold any meaning for Quine and is rejected by him. Conversely, according to Hypotheticalism, justified beliefs have only *instrumental* epistemic value or are *instrumentally* justified. Their justifiedness lies in how they serve as means to other ends. In other words, according to Hypotheticalism, having justified beliefs contributes to achieving one's goal; without having clear goals, justifiedness of beliefs cannot be evaluated. According to Hypotheticalism, outside of a theory, justified beliefs would not hold any value. In this sense, Hypotheticalism readily complements Quinean epistemology.

In Quine's epistemology there is a direct positive relationship between attainment of true beliefs and the expansion of our world theory. An increase in the number of true beliefs entails an expansion of the theory. Quine sets this process, truth-seeking or expansion of our world theory, as his ultimate epistemic end. "There is no question here of ultimate value, as in morals; it is a matter of efficacy for an ulterior end, truth or prediction."[144] Thus, Hypotheticalism, or hypothetical epistemic normativity, fits comfortably with Quine's naturalism. Beliefs are

[143] Chase B. Wrenn, "Hypothetical And Categorical Epistemic Normativity." *The Southern Journal of Philosophy* 42.2 (2004): pp. 273-290.

[144] Wrenn, C. (2006). Epistemology as Engineering? *Theoria* 72 (1):60-79. P. 63

justified as long as they serve that end; in other words, as long as they serve as vehicles that take us to true beliefs or result in the expansion of our theory. Like a natural scientist, a Quinean epistemologist helps in unveiling the mysteries of the natural world. That is the ultimate goal. Beliefs or sentences within our theory that do not serve to improve and expand our theory are not justified, and must either be corrected or removed from our theory.

Epistemic Principles are Extracted from our Knowledge Superstructure

As mentioned earlier, Quine's epistemologist looks for epistemic principles and extracts them from our knowledge superstructure. However, it is still unclear how this occurs. In what follows I aim to elaborate on what Quine may have had in mind.

The inherent engineering norms, within Quinean epistemology, are discovered when it is asked, "what ought we to do to attain true and correct beliefs, efficiently?" The answers are directly linked to science's view on *how* we can, economically, expand our theory of the world. In addition to explicitly stating some norms, Quine guides and encourages naturalized epistemologists to seek and find more norms themselves. He considers, "*prediction of observation* as a test of a hypothesis"[145] to be a general norm for naturalized epistemology. Epistemic principles *ought* to help to increase our prediction power or prediction precision. Moreover, for Quine the central pillar of empiricism is "nihil in mente quod non prius in sensu"[146] or "Nothing is in the mind that was not first in the senses." He considers this pillar to

[145] W. V. Quine, and Roger F. Gibson, "Naturalism; or, Living within One's Means." in *Quintessence: Basic Readings from the Philosophy of W.V. Quine*. Cambridge, Mass.: Belknap Press of Harvard University Press, 2004. p. 281.
[146] W. V. Quine, *Pursuit of Truth*. Cambridge, Mass.: Harvard University Press, 1990. p. 19.

be "the most notable norm of naturalized epistemology"[147] and "a prime specimen of naturalized epistemology."[148]

Although Quine labels this pillar as a norm, it is, in reality, a descriptive statement with strong normative implications. Quine must have assumed that the implications were sufficiently vivid for he did not elaborate on the normative aspect of his prime specimen. Nevertheless, the abovementioned descriptive statement readily leads to an epistemic principle; a criterion for a belief to be justified is that it ought to have been formed according to the information that was received through the senses. This principle implies that any belief that is founded upon anything other than our sensory experiences is epistemically unjustified. Unjustified beliefs do not contribute to the expansion of our knowledge theory.

It must be noted that according to Quine his prime specimen is a "discovery of natural science."[149] He says, "science affirms the slenderness of its own data."[150] The scientific fact about how we receive information from our environment, which has clear normative epistemic implications, is discovered by scientists through scientific research. By using the aforementioned example, Quine attempts to indicate that it is, indeed, through and from scientific research that epistemic norms emerge.

In addition to pointing to an example, Quine suggests, "for a richer array of norms, vague in various degrees, we may look to the heuristic of hypothesis: how to think up a hypothesis worth testing;"[151] testing to see if it helps in the expansion of our theory and making accurate

[147] Quine, *Pursuit of Truth*, p.19.
[148] Quine, *Pursuit of Truth*, p.19.
[149] W. V. Quine, Dagfinn Føllesdal, and Douglas B. Quine, *Quine in Dialogue*. Cambridge, Mass.: Harvard University Press, 2008. p. 312.
[150] Quine, Føllesdal, and Quine, pp. 312 -313.
[151] Quine and Gibson, "Naturalism; or, Living within One's Means." p. 282.

predictions. In line with Quine's epistemology, a naturalized epistemologist could seek epistemic norms and principles by asking the following question: "Based on what I know from our theory of the world, what hypotheses could I examine in order to find more efficient ways in attaining true beliefs?" This question is both scientific and epistemic. It is rooted in observation and empirical investigation, and the means that help with answering this question are within the framework of natural science. Thus, the answer would be a scientific, empirically-testable answer. Through this natural route the naturalized epistemologist may discover more epistemic principles, a list of "*ought's,"* which can be found within the natural framework, and are "subject to future disestablishment."[152]

These naturalized norms are neither categorical nor infallible. Since science or our theory is continuously advancing, future discoveries may lead us to consider, perhaps even reject, our current norms. Moreover, since the norms that are discovered through and from science are *hypothetical* norms, they are applicable only as long as truth-seeking remains the desired end, and as long as they are effective in taking us towards attaining true beliefs. The possibility that they *may* change does not imply that they will change. By assimilating epistemology with natural science, Quine externalizes the study of it. Quinean epistemology, and its components, can be studied and examined in the same way that any other scientific discipline, and their components, are studied and examined.

Epistemic Normativity and Ethical Normativity

In the course of arguing that normativity cannot have a strictly causal or nomological basis, Kim compares epistemology to ethics. Quine, in response, utilizes this comparison to clarify his own position on normativity. For Quine, the normative, as in engineering, becomes descriptive

[152] Quine and Gibson, p. 282.

"when the terminal parameter is expressed"[153] or when a specific goal is selected. In Quine's system, epistemic norms and justification are instrumental. Needless to say, whether this is a cogent conception of epistemic rationality remains a hotly debated topic in epistemology. Quine states, "we could say the same of morality if we could view it as aimed at reward in heaven."[154] If the terminal parameters are determined, the normative in ethics becomes descriptive, too. For example, if we desire to be rewarded in heaven, we ought not to steal. If we desire to be rewarded in heaven, we ought to give to charity. We could rephrase the previous normative statements into descriptive causal statements. For example, giving to charity causes us to be rewarded in heaven, and refraining from stealing causes us to be rewarded in heaven. From this perspective, the normative becomes descriptive and finds a place in the natural domain. Moreover, in these examples, as in Quine's approach, the end goal must be determined prior to seeking the proper means to reach it. Neither the goal of reward in heaven nor the goal of truth-seeking is obvious at the start or inherently known.

For Quine, truth-seeking, in the sense of expanding our theory of the world, is an empirical generalization. As humans, we constantly receive inputs from our surroundings, which result in outputs about our environments and our world. Our ontology is continuously swelling. From Quine's perspective, this is equivalent to truth constantly being sought after. For him, this is what we do, naturally, as humans. In turn, his normative epistemology aims to enhance and improve this natural tendency or process. Thus, by setting or accepting truth-seeking as a terminal parameter, Quine gives epistemic principles their force, a direction to aim for. To correct and improve our world theory, epistemic principles *ought to be* followed. From a

[153] W.V. Quine, "Reply to Morton White," in Lewis Edwin Hahn, and Paul Arthur Schilpp. *The Philosophy of W.V. Quine*. La Salle, Ill.: Open Court, 1986. pp. 664-665.
[154] Quine, "Reply to Morton White," pp. 664-665.

descriptive perspective it may be stated, following epistemic principles and norms cause the correction and the enhancement of our knowledge theory. The final goal is expanding our world theory or attaining true beliefs; insofar as that is so, one ought to take appropriate means thereto.

Kornblith's Argument for Truth-seeking as an Epistemic End

Quine takes truth-seeking to be his epistemic goal. Hilary Kornblith, a proponent of naturalized epistemology, in his paper, "Epistemic Normativity"[155] argues in support of Quine's decision to select truth-seeking as his "terminal parameter."

Kornblith states, "what we need is an account of the source of epistemic normativity which does not make a mystery of it."[156] For Quine, epistemic normativity emerges or stems from the expansion of our true beliefs or the expansion of our knowledge superstructure. In other words, truth-seeking is the source of epistemic normativity. Kornblith, considers Quine's decision as justified because truth-seeking is very widely held, and hence, "the interest of [his] normative scheme is assured."[157] In other words, since most people do already share Quine's vision regarding true beliefs, they would have an interest to follow Quine's normative epistemology as their means. Kornblith explains, "since many people do clearly care about the truth of their beliefs, Quinean epistemic norms, construed as imperatives contingent upon valuing truth, will carry normative force for a great many people."[158]

Nevertheless, an objection appears at this point. Reasons must be given to justify the choice of one's end. In addition, these reasons must be open for evaluation. Quine's approach seems to pay no attention to either of these demands. Quine, himself, may argue that, if we do not have a choice but to seek true beliefs, then rationalizing it or justifying it is not necessary.

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[155] Hilary Kornblith, "Epistemic Normativity."*Synthese* 94.3 (1993): pp. 357-376.
[156] Kornblith, p. 358.
[157] Kornblith, p. 365.
[158] Kornblith, p. 365.

For example, it is not necessary to rationalize or justify breathing. It is what we do as humans. However, we can study breathing. By doing so, we can find ways to improve and enhance our breathing. In fact, this is one of the main goals of meditation practices.

Kornblith acknowledges the strength of the objection against Quine and proceeds to reinforce Quine's decision through a different route. He finds a strong reason for setting truth-seeking as the ultimate epistemic end. Kornblith brings to attention an important point about valuing truth. He argues that to make sense of any human activities, favoured ends are offered. The suitable end that is offered to make sense of science is truth. To understand scientific activities it helps to realize that science aims at reaching truth. From a naturalized epistemologist's perspective, epistemic activity is a form of scientific activity, namely, applying science to itself. Thus, for the same reason that truth is offered as a favoured end to science, it may, also, be offered as a favoured end to epistemology in order to make sense of epistemic activities. In Kornblith's words, "truth is thus frequently offered as at least one of the goals of epistemic activity because science is seen as a paradigm of such activity, and we can understand what science is about when we see it as motivated by a desire for truth."[159] Similarly, naturalized epistemology can be understood more readily when it is seen as motivated by a desire for truth. Science as a system of evaluation measures its success by its "conduciveness to truth;"[160] epistemology can employ the same criterion; success in Quinean epistemology is defined by acquiring true beliefs. According to this point of view, "norms that arise from such evaluations remain merely hypothetical, for they are contingent upon valuing the activity which is made sense of by the indicated concerns."[161]

[159] Kornblith, p. 366.
[160] Kornblith, p. 366.
[161] Kornblith, p. 366.

Kornblith further strengthens his position and affirms the value of truth-seeking as an epistemic end by explaining that "… we need to make evaluations of alternative courses of action and, whatever we care about, we need these evaluations to be done accurately, i.e., by a cognitive system which generates truths."[162] Kornblith argues that in order for us to value *anything* we must value truth as a vehicle. By valuing truth, we are able to *accurately* pursue our goals, whatever they may be. Therefore, valuing truth is a necessary means to attain our ends, *any* ends that we may seek. "It seems that someone who cares about acting in a way which furthers the things he cares about, and that includes all of us, has pragmatic reasons to favor a cognitive system which is effective in generating truths, whether he otherwise cares about truth or not."[163] Thus, we should "adopt a method of cognitive evaluation which endorses truth-conducive processes."[164] Whatever our end(s), our cognitive system needs to be accurate or truth-conducive. In Kornblith's picture, there is a distinction between our cognitive ends and our cognitive means. Whatever we value or care for as an end is distinct from what we need as an instrument to attain that end. "Truth is pre-eminent."[165] Truth may not be what we value as our ultimate end, but we need it, necessarily, as our means to help us achieve our ultimate end. To set truth-conduciveness as a means that takes us to our ultimate ends, we must set it as our *epistemic* end.

Kornblith's argument bolsters the Quinean approach by offering a principled rationale for Quine's choice. As stated previously, once the terminal parameter is set as truth-seeking, the normative can be paraphrased or transformed into descriptive. Hence, normative epistemology becomes naturalized.

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[162] Kornblith, p. 372.
[163] Kornblith, p. 371.
[164] Kornblith, p. 372.
[165] Kornblith, p. 372.

Seven Versions of the Normativity Objection

Following a thorough elaboration of Quine's engineering model, it may now be easier to appreciate its strengths and weaknesses in addressing various versions of the normativity objection. Chase B. Wrenn in his paper, "Epistemology as Engineering?"[166] breaks down the normativity objection into seven different versions and argues that Quine's engineering approach addresses four of the seven versions, but cannot defuse the other three.

For reasons already given, Quine's engineering approach sufficiently addresses what Wrenn considers to be the "simple normativity objection,"[167] according to which naturalistic epistemological theories cannot be normative *at all*.[168] Quine asserts that naturalized epistemology as an applied science is inherently normative, and it "uses sciences to answer questions about how best to use our minds and to decide what to believe."[169] If our goal is to obtain true beliefs, Quine's normative epistemology prescribes how we *ought to* do so, efficiently.

Two other versions of the normativity objection that could readily be defused by Quinean epistemology are the prescriptive normativity objection and the evaluative normative objection. According to the prescriptive normativity objection, norms of naturalistic epistemology are "inadequate because they cannot be prescriptive."[170] In other words, according to this objection, naturalized norms cannot have any prescriptive consequences, "they cannot express one's attitude of approval, disapproval, endorsement, etc. of a rule or a course of action."[171] Nevertheless, Quine counters this objection. The normative principle that "we ought not to

[166] Chase B. Wrenn, "Epistemology As Engineering?" *Theoria* 72.1 (2006): pp. 60-79.
[167] Wrenn, "Epistemology As Engineering?" p. 67.
[168] Wrenn, "Epistemology As Engineering?" p. 67.
[169] Wrenn, "Epistemology As Engineering?" p. 70.
[170] Wrenn, "Epistemology As Engineering?" p. 67.
[171] Wrenn, "Epistemology As Engineering?" p. 64.

accept any belief that is based on any information that is not received through our sensory system," for example, is clearly prescriptive. Since our goal is to attain true beliefs and enhance our theory and since beliefs formed based on extra-sensory information do not contribute to either one of our goals, naturalized epistemology disapproves of such beliefs and does not consider them justified.

Similarly, the same example may be used to address the evaluative normative objection to show that naturalistic norms are capable of ranking or rating various available principles, propositions, beliefs or courses of action. For instance, a belief that is formed based on information that is not received through our sensory system cannot be considered natural and thus, does not join our theory of the world. Subsequently, the epistemologist cannot utilize it. Such a belief is epistemically bad or disliked. Consequently, it can be seen that naturalized epistemology sufficiently addresses what Wrenn labels as the "evaluative normativity objection,"[172] too. Naturalistic normative principles can adequately have evaluative consequences and "rate something on some scale of better or worse, good or bad."[173] They can "register one's liking or disliking ... of something in some respect."[174] Naturalized epistemology, as an applied science or as engineering, is and can be both evaluative and prescriptive.

The fourth version of the normativity objection that may easily be addressed by Quine is the hypothetical normativity objection. It claims that naturalized norms cannot be hypothetical.[175] According to Wrenn, there is a straightforward way to show that naturalized epistemic norms are hypothetical. He states, "epistemic normativity arises from the causal

[172] Wrenn, "Epistemology As Engineering?" p. 67.
[173] Wrenn, "Epistemology As Engineering?" p. 64.
[174] Wrenn, "Epistemology As Engineering?" p. 64.
[175] Wrenn, "Epistemology As Engineering?" p. 67.

connections between cognitive means and epistemic ends."[176] After we select an epistemic end as our terminal parameter, such as truth-seeking, we may begin to calculate how we ought to guide our cognitive means to reach it. As we have seen, the Quinean epistemologist, as an engineer, applies science to itself to enhance our theory of the world. Doing so leads to a better acquisition of true beliefs or in other words, to a more efficient expansion of our theory. The Quinean epistemologist prescribes how we *ought* to seek true beliefs, our end, more efficiently. Hence, the hypothetical normativity objection is readily defused.

Several versions of the normativity objection, then, are easily addressed by Quine. According to Wrenn, however, the next three versions cannot be defused by Quine's engineering approach. These three versions are the "categorical," "external well-motivated" and "internal well-motivated" normativity objections. According to the categorical normativity objection, naturalistic norms cannot be categorical. Their value is dependent on or linked to a specific end; without such an end, naturalized norms would be valueless. The latter two versions of the objection are linked to the value or worth of epistemic goals. According to the "external well-motivated" normativity objection, naturalized hypothetical normativity is "inadequate because [it] cannot be well-motivated."[177] According to the "internal well-motivated" normativity objection, even if naturalized hypothetical normativity could be well-motivated it is "inadequate because [it] is too weak to establish [its] own well-motivatedness."[178]

Wrenn states that "a hypothetically normative theory is *well-motivated* if and only if its consequences include evaluations or prescriptions relativized to worthwhile ends, goals, or purposes. Hypothetically normative theories are *ill-motivated* if and only if they have normative

[176] Chase B. Wrenn,"Hypothetical And Categorical Epistemic Normativity." *The Southern Journal of Philosophy* 42.2 (2004): p. 289.
[177] Wrenn, "Epistemology As Engineering?" p. 67.
[178] Wrenn, "Epistemology As Engineering?" p. 67.

consequences relativized to goals not worth having."[179] In simple terms, it is the value of the end that determines whether the means are well-motivated or ill-motivated. Any theory that leads to or contributes to an unworthy end is ill-motivated, and any theory that leads to or contributes to a worthy end is well-motivated. Ultimately, the two motivation-related normativity objections argue that since the worth or value of Quine's epistemic end(s) cannot be justified or accepted as worthy, naturalized normativity fails as an option for epistemology.

The internal well-motivated version of the normativity objection argues that naturalistic epistemology, in our case, Quinean epistemology, is inadequate because it cannot, using its own resources, explain why pursuing truth is valuable or why truth should be pursued in the first place. In other words, it cannot justify truth-seeking from within its epistemic theory. In short, Quine's epistemic end is not *epistemically* justified. Therefore, its well-motivatedness cannot be epistemically established.

Importantly, this internal objection remains even after Kornblith justifies truth-seeking as the end for Quine's epistemology. Kornblith's argument for truth-conduciveness as a legitimate, even necessary, end addresses and defuses the *external* well-motivated version of the normativity objection: It shows, from outside of the epistemic theory, that setting truth or truth-conduciveness as an end for epistemic activities is not only justified, but necessary. Kornblith concludes that because truth must be sought, if we desire accuracy in any of our cognitive endeavours, Quinean naturalized epistemology is correct in setting truth-seeking as an epistemic end. However, Kornblith does not argue that Quinean epistemology, itself or internally, shows that truth-seeking is necessary.

[179] Wrenn, "Epistemology As Engineering?" p. 67.

According to the *internal* version of the well-motivated objection, even if the value of truth-seeking could be defended from without epistemology, a justification that stems from within the epistemic theory that sets truth as its end is still required. The internal well-motivated normativity objection "maintains that the value of our epistemic goals must be established *from within* epistemology. Not only must an adequate epistemology give guidance for the pursuit of worthy epistemic goals, it must explain why they are worthy."[180] If an epistemic theory cannot complete this task, then it fails to show that its goal is worth pursuing.

Considering Quine's engineering approach, the internal well-motivated normativity objection is equivalent to asking the engineer to show or explain not only *how* a bridge ought to be built but *why* that specific bridge ought to be built in the first place. If the engineer cannot respond to the latter concern, and the Quinean normative epistemologist cannot, then according to this objection, the bridge building project or, similarly, naturalized norms cannot be shown to be well-motivated, and subsequently, cannot pass the internal well-motivated normativity objection.

Bearing in mind Quine's holistic approach, he would most likely object against both versions of the well-motivatedness objections, and indirectly against Kornblith's defence of his approach. For Quine, various domains within our theory of the world are tremendously intertwined and drawing clear separating lines between their external and internal parameters is mistaken. He would argue that linking accurate predictions to truth comes as a result of scientific studies; as our theory expands and as the quantity of our true beliefs increases, so will the accuracy of our predictions. This belief, true according to Quine, has normative implications and from it the epistemic principle that "truth ought to be sought, if accuracy in our endeavours is desired" can be extracted. In this sense, From Quine's perspective, Kornblith's defence is not

[180] Wrenn, "Epistemology As Engineering?" p. 75.

from outside of his epistemic theory. If we accept this response, which can readily be deduced from Quine's philosophy, then it can be said that Quine does address the internal well-motivedness normative objection against his naturalized approach. Quine can either dismiss this objection based on his holism and his rejection of clear separating lines between inside and outside of epistemology, or he can argue that the selection of truth-seeking as his end is in line with his epistemic principles. If he takes the former route, he can conclude that any objections stemming from such internal-external division is inherently defective. For Quine, there is only one theory of the world, from and through which epistemic principles are formulated.

Another question, related to ends and motivation may be raised. Can "these ends *actually* be worthwhile"[181]? Some critics of naturalized epistemology may demand that the natural epistemologist show that their ends are *actually* worthwhile. However, there is an inherent misguided assumption in this demand. This demand assumes that the value of all ends or even some ends, can be universally recognized as worthy. In response to the aforementioned question it may be asked, "what does it take for an end to *actually* be worthwhile?" The answer to this question is not clear. Furthermore, it is not clear how such inherent worth, if it exists, could be measured, or how could this measurement be done objectively. For an inherent worth of any end to be measured objectively, in order to be accepted universally, a type of transcendental evaluation of that end is necessary, a type of evaluation that is not theory-dependent.

Considering Quine's ontology, his view on the existence of only one world theory and framework, considering his holism that the sub-domains within our theory cannot be demarcated clearly, considering his position on the immanence of truth, he would readily and certainly reject the possibility or the validity of such transcendental evaluation to seek inherent worth of ends. If it is impossible to step out of our theory, then it is impossible to evaluate our theory

[181] Wrenn, "Epistemology As Engineering?" p. 74.

transcendentally. For this reason, for Quine, even if somehow the notion of inherent worth did exist within our theory, it could not be measured or known.

A naturalist, or a Quinean epistemologist, may concede that the fact that science might be able to tell us about how best to make accurate predictions, goes nowhere in telling us whether making accurate predictions is inherently worth trying to do. If this is a weakness of naturalistic epistemology, it is one that it cannot neutralize.

The final, and perhaps the most potent, version of the normativity objection against naturalized epistemology is the categorical normativity objection. According to this version "even if naturalistic epistemological theories can be normative, they are inadequate because they cannot be categorically normative."[182] Their justifiedness is dependent upon an end, and their justifiedness is not grounded.

An epistemic norm or a rule "is categorical if and only if one ought (at least prime facie) to obey it independently of any considerations about one's particular ends, values or goals."[183] Also, categorical imperatives are binding on all individuals alike, without any regard for purposes or goals. "Roughly, a norm binds someone when it makes a legitimate claim on her behaviour."[184] According to the categorical normativity objection, naturalized hypothetical normative epistemology lacks any consequences concerning our "intellectual obligations independent of our cognitive goals."[185] In other words, in the absence of any goals, individuals are not intellectually bound or obliged to follow any epistemic rules or norms. This is the problem. To evaluate epistemic or cognitive goals, or any other ends and desires, epistemic norms are necessary to carry the process forward. To know whether we are taking justified steps

[182] Wrenn, "Epistemology As Engineering?" p. 67.
[183] Chase B. Wrenn,"Hypothetical And Categorical Epistemic Normativity." *The Southern Journal of Philosophy* 42.2 (2004): p. 275.
[184] Wrenn,"Hypothetical And Categorical Epistemic Normativity." p. 274.
[185] Wrenn, "Epistemology As Engineering?" p. 73.

forward to reach any conclusion demands epistemic norms and rules. Categorical normativity is necessary, at some point or another, to sanction hypothetical normativity. Without categorical normativity, naturalized epistemology cannot justify its epistemic end(s) through a justified means or a justified route. The justifiedness of the means is dependent upon the justifiedness of the ends. Without the latter, the former cannot be established. And without categorical norms the latter cannot be established. Therefore, in the absence of categorical norms, naturalized epistemology, cannot have either justified means or justified end(s). For this reason, as a theory, naturalized epistemology is incomplete and inadequate.

As mentioned in the second chapter, Quine's naturalism, which contains epistemology and in which epistemology is contained, is raised and sustained by two pillars, holism and unregenerate realism. Unregenerate realism advocates the emulation of scientific methodology and practices. It demands epistemologists to approach epistemology as scientists approach sciences with a mindset unconcerned with philosophical qualms. One immediate implication of unregenerate realism is that "scientific theories work by elucidating causal connections between means and ends, not by telling us how good things are 'in themselves.'"[186] Science explores the relationship between causes and effects. It evaluates the potency of means to various ends. Science is inherently a hypothetical endeavour. "Engineering and applied science are in the business of answering counterfactual questions about how successful one would be if one were to pursue certain ends by certain possible means."[187] In this sense, it is beyond the reach of empirical investigations to measure intrinsic values of means or ends, even if they do exist.

[186] Wrenn, "Epistemology As Engineering?" p. 69.
[187] Wrenn, "Epistemology As Engineering?" p. 72.

A civil engineer may only be able to explain the value of a bridge relative to the purpose that it serves. Whether a bridge has a value independent of its purpose is a question that an engineer, as an engineer, cannot answer. Similarly, in Quine's normative epistemology, an epistemologist cannot answer whether normative principles in themselves, independent of any purpose to serve, have any value. In the same way that science is not equipped to defend or reject intrinsic values, Quine's epistemology is not equipped to defend or reject the intrinsic value of its epistemic normative principles.

Furthermore, Quine believes that all knowledge at its roots is gained through sensory experiences. Therefore, even if intrinsic values do exist, they are beyond our reach, since information about intrinsic values cannot be received via sensory experiences. If they cannot be received through our sensory receptors, then according to Quinean normative epistemology, they cannot be justified. In other words, Quine does not consider intrinsic values to be justifiable, epistemically.

Like engineering, normative epistemology paves the way towards a selected goal through available means. As previously stated, naturalistic normativity is inherently hypothetical normativity. By admitting that epistemic norms within the natural framework are "subject to future disestablishment"[188] and that epistemic normativity "is a matter of efficacy for an ulterior end, truth or prediction"[189] Quine confirms the hypothetical status of normativity in his epistemology and accepts that his epistemology cannot neutralize the categorical objection. His naturalism, which is fueled by his empiricism, cannot deliver any categorical norms. Static values that do not change "come what may," cannot be discovered by fallible corrigible science

[188] W. V. Quine, and Roger F. Gibson, "Naturalism; or, Living within One's Means." In *Quintessence: basic readings from the philosophy of W.V. Quine*. Cambridge, Mass.: Belknap Press of Harvard University Press, 2004. p. 282.
[189] W.V. Quine, "Reply to Morton White," in Lewis Edwin Hahn, and Paul Arthur Schilpp. *The Philosophy of W.V. Quine*. La Salle, Ill.: Open Court, 1986. pp. 664-665.

or even if coincidentally discovered, their static status and inherent value remain unknown. Categorical values are transcendental values that are located beyond the boundaries of any theory and any empirical investigation. In Quine's framework, there is not any room for transcendentality. Thus, such values do not and cannot exist in his naturalism and thus his epistemology.

It is important to note that it is not the case that naturalized epistemology is alone in being unable to provide a satisfactory reply to the categorical normativity objection. Hilary Kornblith argues that Alvin Goldman's semantic approach to the categorical objection is not adequate, either. According to Kornblith, for Goldman, "to be justified is simply to be something good"[190] and the normative force in Goldman's theory seems "to derive from semantic considerations alone."[191] To say that for a belief to be justified is for it to be the product of a reliable or a truth-conducive process is also "a matter of the meaning of the term."[192] The question that Goldman does not answer is "why is a belief that is good or that is the result of a reliable process, justified?" He does not answer how such a belief is intrinsically justified or how it is categorical, independent of truth-conduciveness as an end. For someone who does not value truth or truth-seeking, a belief that is a result of a truth-conducive process is not necessarily a good belief. Similarly, it is not clear how goodness implies justifiedness; counterexamples may be given in which goodness and justifiedness can be exclusive of one another. For example, a placebo belief that helps one's health and longevity may be seen as a good belief but not epistemically justified. Following an elaborate argument against Goldman's position, Kornblith

[190] Hilary Kornblith, "Epistemic Normativity." *Synthese* 94.3 (1993): p. 361.
[191] Kornblith, p.361.
[192] Kornblith, p.361.

concludes that "semantic arguments cannot explain the source of epistemic normativity."[193] The question why certain beliefs are justified cannot be answered by elaborating on what one means by the term "justified."

If Quine is correct that the only source of knowledge is through our sensory receptors, and if attaining or knowing about categorical or intrinsic values and ends are beyond our cognitive reach and are theory-independent, then to demand them from Quine would contradict the "ought implies can" principle. Using this tactic, Quine may dismiss the legitimacy of any need to be concerned about categorical or intrinsic values. If the categorical objection against Quine is founded upon this request, then Quine would consider this objection irrelevant.

However, if such categorical or intrinsic values *are* within our cognitive reach, within our theory of the world, and can be reached and examined via science, then the categoricalist, or the proponent of categorical normativity, must partake in a scientific investigation to make a case for this cognitive capacity and subsequently, seek these values by employing cognitive sciences. If the categoricalist denies or rejects the initial premise, and rejects that the source of all knowledge is through our sensory receptors, he would still need to engage in science to show his evidence for an alternative view; or to show why the initial premise is flawed. In other words, if any of Quine's critics think that explaining the source of epistemic normativity requires going outside of our theory of the world, or outside of Quine's only framework, and that it can be pursued outside of science and scientific means, then it is their responsibility to demonstrate how such practice might be and how it may proceed. It is their responsibility to indicate that we have other means beyond science, that we are not limited with the information that we receive through our

[193] Kornblith, p. 362.

sensory receptors, and that we can view our theory of the world or knowledge superstructure, transcendentally.

Until such an account is provided, Quine and his proponents ought not to be concerned about showing what, they think, cannot be shown, namely, categorical normativity. Furthermore, if the categoricalist is determined to be engaged with a Quinean epistemologist and has the scientific means to do so, then, by participating in an empirical study, by setting a hypothesis and attempting to support it through empirical means, he, the categoricalist, enters the hypothetical realm of naturalism, which he had hoped to undermine.

Concluding Remarks

Following Quine's decision to re-shape and re-invent epistemology, and to unify it with natural science, many objections emerged against his vision. One of the most enduring and robust objections against his epistemology is the normativity objection. As Wrenn indicates this objection has several versions, however, the most commonly known version is its simplest version, stating that a naturalistic epistemology cannot be normative at all.

To reply to this objection and to dissolve it, Quine introduces his engineering approach. By comparing naturalistic normative epistemology with engineering, or applied sciences, Quine shows that naturalized epistemology is inherently normative. However, unlike the traditional understanding of normative, Quine views normativity as a scientifically-manufactured instrument, or an instrument that has been extracted from science, a technology of truth-seeking, which guides us to true beliefs or accurate predictions via enhancing our theory. Quine's epistemology coherently fits and is contained within his naturalism. As stated in the previous chapter, to understand Quine's epistemology, it is *necessary* to understand the reciprocal

relationship between his epistemology and his ontology. To interpret him uncharitably and without paying sufficient attention to his larger stance makes his engineering approach unsatisfactory and lacking.

In this chapter, it was shown that Quine's engineering model directly and readily defuses four of the seven versions of the normativity objections. Hilary Kornblith constructs a solid argument in favour of truth-conduciveness as an end, which bolsters Quine's normative epistemology. Moreover, by justifying truth-seeking from without epistemology, Kornblith attempts to help Quinean epistemology to address the external well-motivated version of the normativity objection. However, both versions of the well-motivatedness objection, may be addressed from the direction of Quine's holism. For Quine, There are not any clear boundary lines within his theory of the world. There is only one theory of the world, from which normative epistemology is drawn and to which epistemic norms are applied. Quine's holism rejects any internal-external divisions. The rejection of the validity of any internal-external division suffices as a single reply to both versions of the well-motivatedness objection.

Lastly, the categorical version of this objection may be addressed through the "ought implies can" principle. Quine's position is that it is not possible to step outside of the natural framework to seek categorical norms. Quine may argue that it is not within the reach of our cognitive capacity to either know about intrinsic values or to reach a consensus upon categorical values. If it cannot be done, then it ought not to be sought. Before his critics criticize natural epistemology by demanding categorical norms, they need to indicate how it would be possible to step beyond our scientific theory of the world, and utilize other means and information outside of what science provides.

In the next chapter, I consider a more contemporary version of naturalized epistemology, which circumvents the troubles that face Quine. Michael A. Bishop and J.D. Trout shift the focus of epistemology from belief justification to assessing reasoning strategies. In doing so, they defend a strict naturalized approach and raise the point that those traditionalists, who are concerned about normativity in epistemology are operating primarily, if not only, on a descriptive ground. In other words, according to Bishop and Trout, the traditional approach to epistemology is inherently descriptive and has the unpleasant scent of brute cultural imperialism.

4. Strategic Reliabilism

Michael A. Bishop and J.D. Trout dedicate a major portion of their book, *Epistemology and the Psychology of Human Judgment*, to undermine what they call "Standard Analytic Epistemology" (henceforth SAE). In effect, they attempt to turn the standard Normativity Objection against SAE, and by doing so, they attempt to place the onus on SAE to show that it is not an inherently and purely descriptive endeavour.

In terms of their positive views, Bishop and Trout follow Quine's lead and integrate epistemology with psychology. In so doing, they aspire to unveil the reasons behind the success of Ameliorative Psychology, a science that recommends excellent reasoning strategies for individuals. Their theory focuses on the assumptions that underlie excellent reasoning strategies. According to Bishop and Trout, SAE's main concern is whether token beliefs are justified, whereas they are not interested in the justifiedness of beliefs. They are interested in reasoning excellence and do not deem beliefs that are considered justified by SAE to be relevant to epistemic excellence. In a nutshell, their theory goes beyond justifiedness of beliefs and aims to help individuals attain ideal outcomes, according to their unique circumstances, through excellent reasoning.

Bishop and Trout's portrayal of SAE is questionable and Goldman's externalist Process Reliabilism may be used as an objection against it. For Goldman, "there must be some justification-conferring processes or properties"[194] to make a token belief justified. The focus of his theory seems not to be token beliefs but the processes that lead to their formation, or the way a token belief is caused or causally sustained. Nevertheless, according to Goldman, "a belief is

[194] Alvin Goldman, "What is Justified Belief?" in George Sotiros Pappas. *Justification and Knowledge: New Studies in Epistemology*. Dordrecht, Holland: D. Reidel Pub. Co., 1979. p. 307.

justified in case it is caused by a process that is in fact reliable, or by one we generally believe to be reliable."[195] Although Goldman does take a nonstandard view about justification, he does not deny that justification is of epistemic significance. In contrast, for Bishop and Trout evaluating beliefs is unnecessary and justification is not of epistemic significance.

In this chapter, I will begin by setting out Bishop and Trout's critique of SAE and show how they arrive at the conclusion that SAE is a bad descriptive endeavour without any normative force behind its justificatory principles. After delivering their arguments against SAE, I will proceed to discuss their alternative to it. They view their theory as a healthy naturalized substitute that is practical, social and scientific. It is scientific at its core, able to produce meaningful normative principles, backed by psychology and understandable and usable by all people and not just a specialized group of philosophers. They label it Strategic Reliabilism and they see it as the epistemic framework or as the theory for Ameliorative Psychology.

Ameliorative Psychology in their view is applied epistemology or applied Strategic Reliabilism. Bishop and Trout aspire to transform epistemology into a discipline that is practical and makes the world a better place. Finally, to critically evaluate their theory I will introduce and examine the Aristotelian Principle, the axial principle of their theory. It initiates their studies and sustains their theory. In addition, the scientific nature of their theory will be assessed and I will argue that Strategic Reliabilism, at its core, is as unscientific as SAE theories. Their theory, like SAE theories, stems from epistemic intuitions and judgments. Subsequently, Bishop and Trout's dissolution of the naturalistic challenge will be examined. The naturalistic challenge demands a theory to make it clear how a descriptive statement, such as "we intuitively value truth," implies or entails or leads to normative advice or some prescription, such as "we *ought to* value truth." I

[195] Goldman, "What is Justified Belief?. p. 316.

will argue that while Bishop and Trout succeed in showing, how, via Ameliorative Psychology, empirical studies can result in normative recommendations, they fail to adequately dispel the naturalistic challenge. They fail to provide a satisfactory naturalistic basis for epistemic norms.

SAE is a Bad and Imperialistic Descriptive Endeavour

Bishop and Trout criticize SAE for its "brute cultural imperialism."[196] A controversial study by Weinberg, Nichols and Stich[197] concludes that "people in different cultural and socioeconomic groups make significantly different epistemic judgments."[198] Although this study, like other studies of experimental philosophy, is highly controversial, Bishop and Trout treat it seriously and based on its results consider SAE theories to be "an odd kind of cultural anthropology."[199]

According to Bishop and Trout, SAE theories spring from epistemic judgments of a particular socioeconomic group of people, located in a specific culture. They all are rooted in similar environments and share similar environmental influences. Bishop and Trout argue that if we seek a common denominator amongst them, we would notice that at their cores they are all descriptive and only "describe how privileged (mostly) Westerners with Ph.D.s in philosophy engage in epistemology."[200] Bishop and Trout maintain that SAE is founded upon and operates according to the epistemic judgments of Western philosophers. Weinberg, Nichols and Stich view SAE likewise and deem it "ethnoepistemology." They state, "our data indicate that when epistemologists advert to 'our' intuitions when attempting to characterize epistemic concepts or

[196] Michael A Bishop and J. D. Trout. *Epistemology and the Psychology of Human Judgment*. New York: Oxford University Press, 2005. p. 108.
[197] J. Weinberg, S. Nichols & S. Stich, "Normativity and Epistemic Intuitions," in Joshua Michael Knobe. *Experimental Philosophy*. Oxford: Oxford University Press, 2008. pp. 17-46.
[198] Bishop and Trout, p. 107.
[199] Bishop and Trout, p. 108.
[200] Bishop and Trout, p. 108.

draw normative conclusions, they are engaged in a culturally local endeavor – what we might think of as ethnoepistemology."[201]

Bishop and Trout take note of cultural influences on epistemic intuitions. They question whether culturally-influenced epistemic principles of Western philosophers should be preferred over culturally-influenced epistemic intuitions of non-Western, non-philosophers. In their view, "to make universal claims – to claim SAE is more lofty than anthropology – has the uncomfortable feel of brute cultural imperialism."[202] Bishop and Trout hold the view that the normative status of SAE is concocted. Its evaluations and prescriptions are entrenched in the Western culture and lack any normative force outside of it. In short, they are impractical and ineffective in other cultures.

Bishop and Trout link SAE's imperialism to its "stasis requirement."[203] According to the stasis requirement, justificatory principles must lead to beliefs that "leave our epistemic situation largely unchanged."[204] They cite the following passage by Kim in particular to further clarify what they mean by the stasis requirement: "it is expected ... that according to the criteria of justified belief we come to accept, we know, or are justified in believing, pretty much what we reflectively think we know or are entitled to believe."[205] It is a valid question whether Kim actually means what Bishop and Trout take him to mean here. It seems uncharitable to assume that Kim believes philosophical deliberation or epistemological theorizing cannot result in a significant change in beliefs. A charitable reading of Kim would incline us to believe that he is likely urging that epistemological theorizing should not lead us to outlandish world-views.

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[201] Weinberg and Stich, "Normativity and Epistemic Intuitions," p. 40.
[202] Bishop and Trout, p. 108.
[203] Bishop and Trout, p. 8.
[204] Bishop and Trout, p. 9.
[205] Jaegwon Kim, "What is "Naturalized Epistemology?"." *Philosophical Perspectives* 2 (1988). p. 382.

At any rate, Bishop and Trout deem the stasis requirement "profoundly conservative."[206] According to them, this requirement makes any radical change to our beliefs and/or following a successful non-traditional epistemology "virtually impossible."[207] It keeps epistemology, unlike any other natural sciences, stagnant and dormant. Bishop and Trout state, "in the natural sciences ... hypotheses are tested against the world. But in SAE, hypotheses are tested against the well-considered judgments of other (similarly trained) philosophers."[208] They are concerned that those who formulate SAE theories and those who evaluate them share similar cultural and environmental influences and as a result hold similar epistemic intuitions. Similar epistemic intuitions, most likely, result in similar reflective equilibria and similar epistemic judgments. Ultimately, such similarity in judgment keeps epistemology from any radical reform.

Reflective equilibrium is a contemplative process that ensures our particular judgments cohere and are in harmony with our general principles. Bishop and Trout convey two different versions of reflective equilibrium, the wide and the narrow. Narrow reflective equilibrium is when an individual, coherently, reshapes or rearranges his normative principles upon the arrival of new information or proposition.[209] It is the process of aligning our normative judgments regarding specific cases with our general normative principles and vice versa.[210] Wide reflective equilibrium incorporates our best theories into the aforementioned alignment. Wide reflective equilibrium is the process of aligning together our normative judgements regarding specific cases, our best theories and our general normative principles.[211] Theories and judgments about particular cases that are aligned with our general epistemic principles are considered justified,

[206] Bishop and Trout, p. 9.
[207] Bishop and Trout, p. 9.
[208] Bishop and Trout, p. 106.
[209] Bishop and Trout, p. 129.
[210] Bishop and Trout, p. 9.
[211] Bishop and Trout, p. 9.

and those that are not aligned are considered unjustified. Bishop and Trout argue that due to the stasis requirement and cultural influences SAE's general principles are similar, and as a consequence, judgments and theories that are similar are considered justified. Any radically different theory or judgment would not be in equilibrium with SAE's general principles, and thus, would be considered unjustified.

Stephen Stich shares Bishop and Trout's concern. To argue against reflective equilibrium as a valid evaluation method, he questions the justifiedness and the soundness of general principles in its formula. He states, "it seems entirely possible for the expert community, under the influence of ideology, recreational chemistry, or evil demons, to end up endorsing some quite nutty set of rules."[212] Although the process of peer review is designed to guard against that from occurring, Stich could widen his net and include within his "expert community," those individuals involved with the process of peer review as well.

In line with Stich's point it may be argued that Western philosophers are part of an expert philosophy community or culture. Cultures either influence or entirely produce knowledge, principles and intuitions. SAE theories are founded upon intuitions. SAE's general criteria and evaluative principles are founded upon the epistemic intuitions of Western philosophers. Therefore, to a certain extent they are relative to western philosophers' culture. Bishop, Trout, and Stich, disapprove of praising circumstantial and culture-based principles of one group over another. To consider the principles of one particular group normative and hence, binding for everyone, including others outside of that group is capricious for Bishop, Trout and Stich. Bishop and Trout allege that this capricious approach has become a habit among standard

[212] Stephen Stich, "Reflective Equilibrium, Analytic Epistemology And The Problem Of Cognitive Diversity." *Synthese* 74.3 (1988). p. 400.

analytic epistemologists in the past few centuries. For Bishop and Trout, the stasis requirement combined with reflective equilibrium is the reason behind SAE's stagnation and cultural biases. In addition, standard analytic epistemologist does not need to have been tutored by scientific discoveries. In short, Bishop and Trout maintain that SAE suffers from cultural biases and is not educated in sciences. Hence, its theories are "*bad* descriptive theories."[213] They encourage SAE to learn from psychology to "accurately account for their judgments about knowledge or justification."[214]

Against Bishop and Trout's objection it may be stated that: The origin of principles cannot be taken as evidence to discredit them. The fact that a set of principles emerge from a culturally-situated context does not entail that cultural forces have irrationally or inaccurately biased those principles. For Bishop and Trout to bolster their case, they need to establish that culture-based principles and rules mislead epistemic judgments and intuitions and result in false outcomes.

Bishop and Trout may respond by stating that the accuracy or rationality of SAE's principles is not the main concern. The chief concern is applying them universally or considering them suitable and binding for everyone. To clarify the following example can be used. A philosopher from culture P with epistemic intuition X has formulated Q principle. Q principle stems from and is sustained by epistemic intuition X. Intuition X originates from and is supported by P's culture; outside of P's culture it may either not exist or not be supported. Accordingly, Q principle outside of P's culture in the absence of intuition X cannot be sustained or accepted. It lacks the normative force to be either reason or action guiding.

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[213] Bishop and Trout, p. 109.
[214] Bishop and Trout, p. 109.

To strengthen the abovementioned example, Q, P and X can be replaced with the following sentences. Q can be switched to "for a belief to be justified it *ought to* be in harmony with holy books." P can be changed to "a Middle Eastern culture." X can be replaced with "holy books are privileged sources of evidence." Once we assemble these new replacements together, we arrive at the following: A philosopher from the Middle Eastern culture with the intuition that holy books are privileged sources of evidence formulates the principle that for a belief to be justified it ought to be in harmony with holy books. The intuition that holy books are privileged sources of evidence originates from and is supported by the philosopher's Middle Eastern culture. However, outside of that philosopher's culture that intuition may not exist or may not be supported. Accordingly, the principle that for a belief to be justified it ought to be in harmony with holy books, outside of that philosopher's culture, and in the absence of the intuition that holy books are privileged sources of evidence, cannot be sustained or accepted. It lacks the normative force to be either reason or action guiding, and cannot be imposed globally.

Bishop and Trout see any attempt to provide a traditional account of knowledge as, essentially, anthropology. Anthropology is descriptive and lacks normativity. Therefore, in their view, traditional epistemology as a form of cultural anthropology is essentially descriptive and in direct conflict with the normative aspirations of epistemology. Whether the proponents of SAE describe the inner workings of coherentism, foundationalism or reliabilism, "the obvious challenge for these theories is: How are they to extract normative consequences from a descriptive theory?"[215] The main concern is not scepticism about the rightness of such epistemic intuitions. The central question is how can principles based on local intuitions and judgments be imposed globally. Whether justification depends on a proper doxastic system or inferences from

[215] Bishop and Trout, p. 109.

basic beliefs is not the issue. The issue is how either of these two culturally-grown solutions can be appropriately forced universally. Ultimately, Bishop and Trout's primary point is that epistemic norms of SAE do not have any prescriptive or evaluative force beyond the boundaries of western philosophy.

In short, from Bishop and Trout's perspective, SAE is descriptive, parochial and bad. SAE's shortcomings persuade them to develop and defend a theory that replaces "the subjective judgments of the traditional epistemologist with objectively tested material of documented integrity."[216]

Strategic Reliabilism Does Not Concentrate on Token Beliefs

Bishop and Trout criticize SAE for its focus on justification of token beliefs. They contrast their theory with SAE by ensuring that it is not about justification and that it "does not take as a major starting point philosophers' considered judgments about the epistemic status of beliefs, theories, or reasoning strategies."[217] They reject the stasis requirement and they contend that their theory does not start with any culture-based intuitions or judgments.

Bishop and Trout concentrate on reasoning strategies and epistemic excellence. Their normative recommendations aim to enhance individuals' reasoning according to their circumstances. Their theory does not evaluate token beliefs; it evaluates and prescribes reasoning strategies or actions. The justifiedness of beliefs that form following their recommendations is not Bishop and Trout's chief concern. It is plausible for beliefs that form following a recommended strategy to be considered unjustified given traditional criteria and principles. In

[216] Bishop and Trout, p. 155-156.
[217] Bishop and Trout, p. 182.

their view, justifiedness of beliefs is irrelevant to what makes a reasoning strategy excellent. "Strategic Reliabilism is not a theory of justification."[218]

To make their position clear, Bishop and Trout supply a scenario in which God provides a group of analytic epistemologists with theory J, a theory that meets all of their "desiderata."[219] In this scenario, there are two possibilities. First, all token beliefs that are justified by theory J are also the beliefs that are the result of excellent reasoning strategies recommended by Strategic Reliabilism. If this possibility is the case, then, they argue that, there is not any need for a theory other than Strategic Reliabilism, since it offers a "straightforward theory of justification."[220] In other words, in addition to its other distinguishing features, Strategic Reliabilism also covers the one feature that SAE could offer, and it does so in a more effective and clear-cut manner. In the second case, the beliefs that are considered justified by the traditional epistemologists are not the same as the beliefs that are the result of excellent reasoning strategies by the reasoner. Those justified beliefs are "deemed justified by a bunch of really smart philosophers who have reflected seriously on their notion of justification"[221] and not by the reasoner.

Bishop and Trout argue that even if those justified beliefs were "deemed justified by every person capable of wielding the concept,"[222] they are detached from the reasoner and have little to zero effect on the actual life of the reasoner. Accordingly, they do not deserve to be recommended to the reasoner. On the other hand, beliefs that follow excellent reasoning strategies are practical and relevant *for the reasoner* and do deserve to be recommended to the reasoner. These beliefs are tailored to maximize the excellent reasoner's chances at reaching

[218] Bishop and Trout, p. 116.
[219] Bishop and Trout, p. 116.
[220] Bishop and Trout, p. 117.
[221] Bishop and Trout, p. 117.
[222] Bishop and Trout, p. 117.

good outcomes in the long run. Thus, it is more practical and fruitful for the excellent reasoner to adopt "robustly reliable strategies for problems of significance"[223] than to be concerned about the justifiedness of his or her token beliefs. Bishop and Trout question the traditional route. They state, "what would the proponent of SAE have [the reasoner] do? Adopt less reliable reasoning strategies or tackle less significant problems or both? If this is the sort of advice the proponent of SAE intends to offer, then perhaps we need to recognize that the orthodox concept of justification, no matter how gilded by philosophical theory, is a crude and insensitive instrument of evaluation."[224] The roles of significance and reliability in Strategic Reliabilism will be discussed and examined shortly.

A healthy epistemological theory for Bishop and Trout is: "Theoretical, practical, and social."[225] It is able to produce recommendations that lead to practical changes; changes that lead to visible positive outcomes for individuals in the real world. In their view, SAE is not practical. For a theory to be social, its recommendations should be understandable, communicable and examinable by a wide range of audiences. Unlike very specialized disciplines such as astrophysics, in which relatively few specialized scientists are busy demystifying the universe, epistemic concerns, such as reasoning excellence are daily concerns for people of all backgrounds. Excellent reasoning assists a football player, an astrophysicist and a chef, alike, to select effective and efficient strategies and actions in their fields, professions and lives. This widespread need for reasoning excellence necessitates practical and accessible means to attain it. Accessibility does not entail thorough comprehension and it does not call for converting people

[223] Bishop and Trout, p. 118.
[224] Bishop and Trout, p. 118.
[225] Bishop and Trout, p. 17.

of all backgrounds into specialized epistemologists. Rather it demands guidelines in simple language that can be understood and implemented by all individuals.

It may be argued against Bishop and Trout that economics, law, medicine and sanitation affect us all, however, that does not imply either that economists, lawyers, doctors and sanitation specialists ought to make their expert knowledge accessible to everyone or that we all need to gain expert knowledge in economics, law, medicine and sanitation. In our society there is a division of labour. We rely on experts in various fields so we do not have to become experts in every field. Through division of labour we can better tend to our careers, interests and families.

There are two directions available to Bishop and Trout to counter this abovementioned argument. Firstly, reasoning excellence transcends the division of labour. We cannot rely on experts to reason for us. We can choose to not become economists, lawyers or doctors but we cannot free ourselves from the task of reasoning and instead, delegate it to others. We do not have the option to not reason in life, but we do have the option to either enhance our reasoning capacity or to be indifferent about it. The former choice results in better outcomes in life. There is a widespread desire amongst people to flourish in life. To do so, enhanced reasoning is required, and to attain that accessible guidelines are crucial; guidelines in simple language suitable for people of all backgrounds.

Secondly, there is a distinction between becoming an expert in a profession and having access to guidelines, tips and information in that profession. For example, to enhance one's health or to prevent oneself from getting ill, it is not necessary to become a health care professional but it is necessary to have access to health care guidelines in simple language that could help to those ends. Similarly, to enhance one's reasoning it ought not to be necessary to

become a philosopher. Bishop and Trout do not attempt to dissolve epistemology and make it disappear. Rather they are urging a reorientation of epistemology to make it practical and social.

To sum up, SAE theories are not healthy; they are neither practical nor social. SAE theories are not practical because they "have not led to very much, if any, useful guidance about how people should reason."[226] They are not social because they neither provide "a way to effectively communicate its established findings"[227] nor are organized in such a way to pass "rigorous examination and empirical testing"[228] in order to "minimize the risk of promulgating harmful or mistaken findings."[229] Peer-reviewed journals, theses and dissertations are examinable within a relatively small circle of academics. Bishop and Trout, in agreement with Philip Kitcher, believe that any science needs to be a "well-ordered social system"[230] and they hope to transform epistemology into a healthy scientific system.

Bishop and Trout aspire to formulate an epistemic theory that provides accessible guidelines for attaining robustly reliable reasoning strategies to tackle significant problems in the real world. "Strategic Reliabilism provides a framework for identifying and developing excellent reasoning strategies."[231] An epistemic theory that has the normative force to be reason-guiding or action-guiding is practical and relevant to our daily lives.

The Generality Problem Does Not Plague Strategic Reliabilism

Process-Reliabilism is plagued by the generality problem. Strategic Reliabilism, according to Bishop and Trout, is significantly different from classical process-reliabilism. They utilize the

[226] Bishop and Trout, p. 18.
[227] Bishop and Trout, p. 19.
[228] Bishop and Trout, p. 19.
[229] Bishop and Trout, p. 19.
[230] Bishop and Trout, p. 18.
[231] Bishop and Trout, p. 172.

generality problem to show this. According to process-reliabilism "a belief is justified in case it is caused by a process that is in fact reliable, or by one we generally believe to be reliable."[232] The generality objection stems from being unable to clearly identify the reliable process. Every token belief forms as a result of a token causal process. Each token causal process is bound to or occurs at a specific time and place, under specific circumstances. Furthermore, each process can be characterized differently, in broader or narrower ways. Different characterizations of each process may indicate different levels of reliability. "Each token process that causes a particular belief is of numerous different types of widely varying reliability."[233] The fact that a given process token is an instance of many types, and that we do not have a way of selecting the right type or characterization, make it difficult to isolate the reliable process. Without having a method to spot the reliable process type or the exact justification-conferring property within a process, the classical reliabilist runs the risk of having a belief that may be considered both justified and unjustified. And that is absurd.

Conee and Feldman use the seeing process to clarify the generality problem against classical reliabilism.[234] Some beliefs are formed through seeing. The seeing process consists of a sequence of events. For example, to see a tree and to form a belief that we are seeing a tree, a sequence of events, which involve our eyes, our brains, our judgment and our knowledge, need to occur. Each event occurs once and at the end of the sequence a belief is formed. Each of these events is a type of process. For example, the process of neural stimulation inside the brain and the process of relying on past judgments are two distinct process types within the seeing process. "The number of types is unlimited. They are as numerous as the properties had by the belief-

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[232] Alvin Goldman, "What is Justified Belief?" in George Sotiros Pappas. *Justification and Knowledge: New Studies in Epistemology*. Dordrecht, Holland: D. Reidel Pub. Co., 1979. p. 316.
[233] E. Conee and R. Feldman, "The Generality Problem for Reliabilism."*Philosophical Studies* 89.1 (1998). p.2.
[234] Conee and Fledman, p. 2.

forming process."[235] As a result, the reliabilist faces a serious challenge. He must specify one process type as reliable, which renders a belief justified.

Bishop and Trout are not interested in the justification of beliefs. They are interested in reasoning excellence. According to them, "there is no need for the reliabilist about excellence to demand a unique characterization of the process that produces a belief token."[236] They further elaborate, "it is trivial that different reasoning strategies can have different incompatible epistemic properties."[237] In strategic reliabilism any *one* specific justification-conferring property or process or type is not sought after. They "take epistemic excellence to be a property of a temporal process that's dedicated to the achievement of certain specific goals."[238] An excellent reasoning strategy takes into account the specific circumstances of the reasoner. It takes into account the significance of the problem and the reliability and tractability of the reasoning strategy. The reliability of a specific belief-forming process type is unrelated to the selection of an excellent strategy, because the justifiedness of beliefs is irrelevant. Bishop and Trout are not interested in solving the generality problem. Rather they show that the generality problem is not a problem for Strategic Reliabilism.

Bishop and Trout deem it unnecessary to evaluate involuntary cognitive processes. Instead they direct their attention at "voluntary reasoning strategies – strategies reasoners can choose to use or not to use."[239] For Bishop and Trout "a practical epistemology will offer voluntary reasoning strategies that correct involuntary reasoning processes."[240] They add,

[235] Conee and Fledman, p. 2.
[236] Bishop and Trout, p. 180.
[237] Bishop and Trout, p. 180.
[238] Bishop and Trout, p. 181.
[239] Bishop and Trout, p. 182.
[240] Bishop and Trout, p. 182.

"evaluating the past is not the main point of epistemology."[241] In short, it is impractical, superfluous and cost-inefficient to study and assess the processes that we do not have any control over. The main point of epistemology, for Bishop and Trout, is "to offer clear, usable criteria for epistemic excellence that will yield judgments about the relative quality of competing reasoning strategies."[242] Epistemic excellence, as maintained by Bishop and Trout, "involves the efficient allocation of cognitive resources to robustly reliable reasoning strategies applied to significant problems."[243] It is a "property of reasoning strategies."[244]

The Three Features of Epistemic Excellence: Reliability, Tractability and Significance

The "excellence" of a reasoning strategy, in Strategic Reliabilism, is a function of reliability, tractability and significance. More fully, 'epistemic excellence' is a function of three factors: "reliability on a wide range of problems,"[245] "tractability"[246] or the difficulty level of employing a reasoning strategy and lastly, the "significance of the problems [they are] meant to tackle."[247] In a nutshell, Strategic Reliabilism dictates: "good reasoning involves the efficient allocation of robustly reliable reasoning strategies to problems of significance."[248]

An excellent reasoning strategy ought to be robustly reliable. It ought to consistently make accurate predictions, or have a high truth ratio, on a wide range of problems. Bishop and Trout offer three reasons to show why it is important for a recommended reasoning strategy to be *robustly* reliable, where to be robust is to be "resilient ... under changes in cognizers and

[241] Bishop and Trout, p. 181.
[242] Bishop and Trout, p. 181.
[243] Bishop and Trout, p. 4.
[244] Bishop and Trout, p. 16.
[245] Bishop and Trout, p. 55.
[246] Bishop and Trout, p. 55.
[247] Bishop and Trout, p. 55.
[248] Bishop and Trout, p. 174.

environments."[249] First, to catch a strategy, whose reliability has been overstated due to it being frequently recommended. Testing a strategy under different circumstances shows its actual reliability or predictive power. Second, strategies that are robust are cost-efficient. Keeping in mind one strategy that can be applied to a wide range of problems is less costly than keeping in mind many strategies for many different problems. Lastly, a robustly reliable strategy "can be recommended for general use, regardless of vagaries of an individual's environment."[250] This is also related to the cost-efficiency of the solution.

An excellent reasoner is attentive to the costs and benefits of strategies and problems. He selects cognitively less expensive strategies and avoids expensive strategies, if the outcomes of both strategies are similar. Likewise, aware of his limited cognitive resources, he is diligent and selects to tackle problems that are more significant and with longer-lasting effects. Tractability and significance of the problem are integral functions of reasoning excellence. On the one hand, a strategy may be robustly reliable, but neither tractable nor worth the cost to tackle. This reasoning strategy is not excellent. On the other hand, a strategy may not make accurate predictions often, but be quite tractable and suitable for a specific significant problem. This not-so-reliable strategy would be the choice of the excellent reasoner.

SAE's disregard for the issues of tractability and significance reinforces its lack of normativity and inability to be either reason or action guiding. According to Bishop and Trout, unlike SAE, "Strategic Reliabilism is an explicitly cost-benefit approach to epistemology."[251] SAE places all justified beliefs on the same level. The problem is that there are "infinitely many

[249] Bishop and Trout, p. 75.
[250] Bishop and Trout, p. 75.
[251] Bishop and Trout, p. 183.

justified beliefs one might adopt at any particular time"[252] According to Bishop and Trout, SAE cannot be reason guiding because it cannot point to us which of these infinitely many justified beliefs we ought to adopt. Its abilities are limited to distinguishing justified from unjustified beliefs. SAE's inability to be truly normative is "disappointing"[253] and "surprising"[254] for Bishop and Trout. For them, "cost-benefit considerations are a familiar, even banal, feature of perceptual and cognitive psychology."[255] SAE disregards this "banal" feature of cognitive psychology. SAE's lack of concern for issues vital to normativity bolsters Bishop and Trout's view that SAE theories are "bad descriptive theories."[256] They consider it "surprising, especially given the loud and oft-repeated insistence on the part of proponents of SAE that Epistemology is Normative."[257] Contrary to SAE, Strategic Reliabilism as a practical reason-guiding theory takes into account the fact that human cognitive resources are limited. Subsequently, it encourages efficient allocation of these limited resources towards solving significant problems.

To defend SAE, one of its proponents could make a distinction between "pragmatic considerations" and "fundamentally epistemological considerations" and in turn, claim that concerns regarding resource allocation belong to the former group of considerations. He could add that an epistemologist ought to be concerned only about issues that are fundamentally epistemological.

Bishop and Trout acknowledge this dichotomy between "pragmatic considerations" and "fundamentally epistemological considerations"[258] and respond to the SAE defender by stating

[252] Bishop and Trout, p. 79.
[253] Bishop and Trout, p. 79.
[254] Bishop and Trout, p. 79.
[255] Bishop and Trout, p. 84.
[256] Bishop and Trout, p. 109.
[257] Bishop and Trout, pp. 79-80.
[258] Bishop and Trout, p. 80.

that if we accept that epistemology must only be concerned with the fundamentally epistemological considerations, then we are accepting that "one's epistemological theory will be empty of positive, reason-guiding recommendations."[259] For Bishop and Trout, any normative epistemic theory that is reason or action guiding cannot avoid cost-efficiency or pragmatic considerations. Bishop and Trout's theory is practical. It is set to be reason and action guiding in order to help everyone, philosophers and non-philosophers, with their daily decision makings.

In our daily lives we encounter numerous problems. Some are more significant than others. We do not have unlimited resources to solve each and every problem that we encounter. A practical and normative theory takes this fact into account, evaluates the degree of significance of each problem, and prioritizes the problems at hand. According to Bishop and Trout, unlike SAE theories, "Strategic Reliabilism takes significance to be an ineliminable feature of epistemic evaluation."[260] The features of significance and tractability are both founded upon the fact that human cognitive resources are limited. Although the two features are closely related, they serve different purposes. Through evaluation of the significance of problems we arrive at selecting the right problem to tackle, and through evaluation of the tractability of strategies we arrive at selecting the right strategy to apply. The assessment of the significance of each particular problem, for each individual, precedes the selection of a reasoning strategy for that person. According to Bishop and Trout, an excellent reasoner tends "to focus on significant reasoning problems, even if those problems are difficult to solve."[261]

[259] Bishop and Trout, p. 80.
[260] Bishop and Trout, p. 183.
[261] Bishop and Trout, p. 85.

Significance "has a role to play in the decision to act on judgments."[262] For a theory to be reason-guiding, practical and normative, it needs to show how a reasoner ought to act on epistemic judgments. An excellent reasoner may "come to a judgment but act 'as if' that judgment were mistaken."[263] For example, if a reasoner is justified to believe that there is very little risk associated with a given action, but the costs of being mistaken are quite high, the better reasoning strategy would be to act as though the risk is much higher, contrary to his justified belief. SAE with its infinite many justified beliefs and disregard for significance is incapable of guiding the reasoner to act on his epistemic judgments.

In Bishop and Trout's view "significance of a problem for S is a function of the weight of the objective reasons S has for devoting resources to solving that problem."[264] The particularity of each case and the inability to employ a priori reasoning to determine the significance of each problem is the reason, according to Bishop and Trout, "why so much traditional epistemology neglects the notion of significance."[265] "We cannot know a priori what sorts of problems are significant"[266] because we cannot study our health and well-being a priori. The a priori methods of SAE seek justificatory principles for token beliefs that are independent of circumstances. A priori principles are meant to remain unchanged come what may. In contrast, human welfare and health are always dependent on the circumstances. For these reasons, according to Bishop and Trout, SAE is inclined to circumvent the issue of significance. The difficulty of assessing the significance of each problem for each person keeps the issue of significance outside of the analytic or the a priori domain. According to Bishop and Trout, to be normative, it is necessary

[262] Bishop and Trout, p. 86.
[263] Bishop and Trout, p. 86.
[264] Bishop and Trout, p. 95.
[265] Bishop and Trout, p. 103.
[266] Bishop and Trout, pp. 102-103.

to take into account the issue of significance. The inherent limitations of SAE seriously undermine its normative power.

Bishop and Trout do not present a general definition for significance. They state, "issues of significance arise in particular cases."[267] Their theory is not a "recipe book that will allow a reasoner to identify beforehand all and only the significant problems that confront her."[268] Significance in Bishop and Trout's view is "a property of a problem *for a person*."[269] The uniqueness of each person's circumstances is a crucial factor in preventing Bishop and Trout from presenting a universal, substantive definition of significance. Nevertheless, to refrain from making useful generalizations does not imply their non-existence. For example, it may be stated that obtaining food for survival is significant for all individuals. Bishop and Trout most likely agree. However, in their epistemology, they would be more specific; they would focus on particular problems that each individual faces under unique circumstances to obtain food.

Obtaining food is significant because it is related to human well-being. The notion of significance is "nonaccidentally related to the requirements of human well-being."[270] Good reasoners "adopt reasoning strategies that operate reliably on significant problems, including problems that are important to our well-being."[271] A practical theory that intends to better the world has solid reasons to place human well-being prior to truth-seeking.

However, this view stands in stark contrast to Bishop and Trout's position on setting truth at the center of their epistemology. Bishop and Trout have explicitly stated elsewhere that "like

[267] Bishop and Trout, p. 94.
[268] Bishop and Trout, p. 94.
[269] Bishop and Trout, p. 85. [emphasis mine]
[270] Bishop and Trout, p. 93.
[271] Bishop and Trout, p. 66.

any science, Ameliorative Psychology helps us get closer to the truth about the world."[272] In fact, they "take it that discovering the truth about the basic physical or social structure of the world is *intrinsically* valuable."[273] Truth-seeking, for Bishop and Trout, is important to the point that, they state, "even if we can't be sure that it will lead to any practical results, the physicists ... have epistemic reasons (beyond their prudential reasons) for spending cognitive resources to discover the Higgs boson."[274] It is not clear whether Bishop and Trout's practical theory aims at truth-seeking or at human welfare. This is a serious concern. According to Stich, there is not any reason to connect reasoning excellence to true beliefs. For Stich a good reasoning strategy is that which results in attaining whatever each individual finds valuable, and there is nothing intrinsically valuable about truth. Bishop and Trout's explicit concentration on "pragmatic considerations" as opposed to "fundamentally epistemological considerations," stands at odds with their choice to prioritize truth-seeking over pragmatism. This alarming matter will be discussed in detail, shortly.

Strategic Reliabilism is Founded Upon the Aristotelian Principle

SAE describes how a specific group of people engage in epistemology. It is not clear how from what *is* the case for a specific group of people we can derive what *ought* to be the case for all. Strategic Reliabilism, on the other hand, in Bishop and Trout's view, by heavily relying on the Aristotelian Principle outmaneuvers the naturalistic challenge and shows how the normative can be obtained from the descriptive.

[272] Bishop and Trout, p. 168.
[273] Bishop and Trout, p. 97. [emphasis mine]
[274] Bishop and Trout, p. 97.

The Aristotelian Principle, for Bishop and Trout, is "a necessary precondition for the practical relevance of epistemology."[275] For a practical epistemology to be possible, Bishop and Trout claim, "then the Aristotelian Principle is true."[276] According to the Aristotelian Principle "*in the long run, poor reasoning tends to lead to worse outcomes than good reasoning.*"[277] This principle has normative implications. According to this principle, to achieve better outcomes we should prefer good or better reasoning strategies over poor reasoning strategies. If better outcomes did not result from better reasoning strategies, then seeking ways to enhance our reasoning would be futile. In Bishop and Trout's words, "if the Aristotelian Principle is false, if good reasoning doesn't tend to lead to better outcomes than bad reasoning, then epistemology can't be practically important."[278] Bishop and Trout realize that this principle is a "robust generalization."[279] Robustness is "a matter of consistency and scope."[280] According to them the Aristotelian Principle is empirically very well-supported and it is indeed the case that good reasoning consistently results in good outcomes for a wide range of problems.

The Aristotelian Principle is the backbone of Strategic Reliabilism. By relying on it we gain the opportunity to enhance our reasoning and "lead our cognitive lives."[281] It helps Bishop and Trout to "*start* [their] investigations into the normative."[282] For epistemology to be practical, our epistemic evaluations and principles need to have measurable consequences. Bishop and Trout do acknowledge that "there are no guarantees"[283] for good reasoning to always result in

[275] Bishop and Trout, p. 20.
[276] Bishop and Trout, p. 21.
[277] Bishop and Trout, p. 20.
[278] Bishop and Trout, pp. 20-21.
[279] Bishop and Trout, p. 20.
[280] Bishop and Trout, p. 75.
[281] Bishop and Trout, p. 21 .
[282] Bishop and Trout, p. 20. [emphasis mine]
[283] Bishop and Trout, p. 20.

good outcomes. It is "logically possible"[284] for luck to influence the outcome regardless of the preceding reasoning strategy. By adhering to the Aristotelian Principle, they hope to show that "following the prescriptions of Strategic Reliabilism will *tend* over the long run to lead to better outcomes than violating those prescriptions."[285]

Bishop and Trout's notion of tendency is perplexing. It is not clear whether reasoning *actually* and in practice leads to better outcomes, or whether good reasoning is *disposed* to lead to better outcomes. For example, the fragility of a glass does not entail that it *actually* breaks when it falls, rather it entails that it is *disposed* to break when it falls. Based on Bishop and Trout's aforementioned acknowledgement of the lack of guarantees, it would be safe to assume that that they would opt for the latter option. Thus, according to the Aristotelian Principle, good reasoning is *disposed* to lead to good outcomes. If we grant that this principle is correct, then we can proceed to seek ways to improve our reasoning strategies. If, on the contrary, we reject this principle, then according to Bishop and Trout we would not have any reason or inspiration to train and enhance our reasoning strategies. In short, if we do not accept the normative implications of the Aristotelian Principle, we cannot expect epistemology to be practically important.

The Aristotelian Principle bridges successful outcomes ("is") to how we ought to reason ("ought"). It delivers the opportunity to study what constitutes excellent reasoning strategies. The Aristotelian Principle gives Bishop and Trout a starting point for an extensive process of trial and error, to review and examine different reasoning strategies and their outcomes. Throughout a tedious long-term process, pattern(s) are observed, and good strategies with triumphant outcomes

[284] Bishop and Trout, p. 20.
[285] Bishop and Trout, p. 115. [emphasis mine]

are noticed. Likewise, the common underlying mechanism(s) of successful strategies become visible and available for additional studies. Bishop and Trout notice the pattern(s) and the common mechanism(s) and subsequently, construct an epistemic framework to explain the success of Ameliorative Psychology from an epistemic perspective. From their observations and studies they learn that reasoning strategies, which take into account tractability, robust reliability and significance, result in ideal outcomes consistently and more frequently than those strategies that do not. Tractability, robust reliability and significance are the implicit guiding principles of Ameliorative Psychology.

The Relationship Between Ameliorative Psychology and Strategic Reliabilism

Bishop and Trout's theory has its roots in psychology, or more specifically Ameliorative Psychology. They noticed the underlying principles of Ameliorative Psychology, packaged them into an epistemic theory and labelled it Strategic Reliabilism.

For Bishop and Trout epistemology is a "branch of the philosophy of science"[286] and their task is similar to the task of a philosopher of biology; "just as the philosopher of biology might aim to uncover and articulate the metaphysical assumptions of evolutionary theory, the epistemologist aims to uncover and articulate the normative, epistemic principles behind the long and distinguished tradition of Ameliorative Psychology."[287] They show and explain the reasons behind Ameliorative Psychology's success. Ameliorative Psychology is a comprehensive branch of cognitive sciences that in addition to "predictive modeling,"[288] "includes work in psychology, statistics, machine learning and Artificial Intelligence."[289] "It includes discussions of models

[286] Bishop and Trout, p. 11.
[287] Bishop and Trout, p. 15.
[288] Bishop and Trout, p. 11.
[289] Bishop and Trout, pp. 11-12.

such as linear models, multiple regression formulas, [...]"[290] and much more. Its task is to investigate reasoning strategies and to provide "positive[s] advice about how we can reason better."[291] Its advices and recommendations are "bluntly normative: They tell us how we *ought* to reason about certain sorts of problems."[292]

With the help of the Aristotelian Principle and Ameliorative Psychology, Bishop and Trout confront the naturalistic challenge. They consider the reasoner's circumstances and his desired outcomes as the descriptive "is." The normative "ought" is what the reasoner must do to arrive at his desired outcomes. Quine argued, similarly, that once the terminal parameters are determined, the normative becomes the mechanics of how we reach them. If we grant that there is a direct link and correlation between reasoning strategies and outcomes, then given enough time and observation, we learn how we "ought" to proceed from our current circumstances to our desired end. For example, if it has been observed through time that when facing problem P in circumstance C strategy S often results in the outcome O, and O is good, then it can be supposed that when an individual faces problem P and desires outcome O and is in circumstance C, he or she *ought to* select strategy S. In general, it has been observed through time that tackling significant problems by efficiently allocating cognitive resources to robustly reliable reasoning strategies results in ideal outcomes.

To sum up, through a long-term observation of numerous reasoning strategies and their outcomes, it can be learned how we ought to proceed from our current circumstances to achieve our desired outcomes.

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[290] Bishop and Trout, p. 12.
[291] Bishop and Trout, p. 12.
[292] Bishop and Trout, p. 12.

The Motivation Behind the Formulation of Strategic Reliabilism

The main source of inspiration behind Bishop and Trout's pursuit is the research of Lehman *et al.* (1993). Lehman *et al.*, in their research, evaluated the role and efficacy of formal training of different types of reasoning processes. The enhancement of reasoning via formal instructions of abstract system rules was the focus of their research. They "examined the effects of graduate training in law, medicine, psychology, and chemistry on statistical reasoning, methodological reasoning about confounded variables, and reasoning about problems in the logic of the conditional."[293] The results of their study show that "training in both psychology and medicine can affect statistical reasoning about everyday-life problems, methodological reasoning about everyday-life problems employing a number of rules related to the confounding principle, and reasoning about problems that logicians can solve using the material conditional in deductive logic."[294] However, Lehman *et al.* in their concluding remarks state that "the truth is we know very little about reasoning and how to teach it. The only thing we knew ... seems clearly wrong. Just how wrong, and therefore just how much we can improve reasoning by instruction, is now completely an open question."[295] Bishop and Trout take this open question as an opportunity to explore reasoning enhancement. They claim, not knowing *how* Ameliorative Psychology arrives at its recommendations and being ignorant of its underlying principles are the essential contributing factors that keep us from learning how to train and enhance our reasoning. With this in mind, Bishop and Trout seek to "uncover and articulate the normative, epistemic principles behind ... Ameliorative Psychology."[296] They set their goal to "articulate the epistemic

[293] Darrin R. Lehman, Richard O. Lempert, and Richard E. Nisbett. "The Effects Of Graduate Training On Reasoning: Formal Discipline And Thinking About Everyday-life Events." *American Psychologist* 43.6 (1988): 431-442.
[294] Lehman, Lempert and Nisbett, p. 440.
[295] Lehman, Lempert and Nisbett, p. 441.
[296] Bishop and Trout, p. 15.

generalizations that guide the prescriptions of Ameliorative Psychology."[297] They formulate an epistemological theory to reveal the obscured principles that result in excellent reasoning. To Bishop and Trout Ameliorative Psychology is applied epistemology and "applied epistemology is essentially about second-order reasoning strategies. It concerns thinking about how we can better think about the world."[298]

To avoid a vicious regress, Bishop and Trout rely on the Aristotelian Principle. If we accept that good reasoning results in good outcomes and poor reasoning results in poor outcomes, then by reviewing the outcomes and linking each outcome to a strategy, *over a period of time*, good and poor strategies will stand apart from one another. From this perspective, we arrive at good reasoning strategies via observation and experience. Nonetheless, it is a valid question whether the Aristotelian Principle, itself, has been justified adequately. Was its selection as the foundation of their theory a consequence of reasoning? Or was it based on an epistemic intuition? To select either one of these two options leads to problems. If, on the one hand, its selection is a consequence of reasoning, then it needs to be shown how they evaluated their reasoning strategy prior to the formulation of their theory. If they relied on the principles and methods of SAE theories to do so, then their theory, like SAE, originates from culture-based intuitions and judgments. If, on the other hand, they selected the Aristotelian Principle based on their own epistemic intuitions, then they have committed, precisely, what they have been vigorously objecting to in SAE.

[297] Bishop and Trout, p. 15.
[298] Bishop and Trout, p. 59.

The Evaluation of the Aristotelian Principle

Clearly, Strategic Reliabilism is founded upon and is sustained by the Aristotelian Principle. However, the Aristotelian Principle, though not necessarily false, falls prey to the sorts of criticisms that Bishop and Trout level against SAE.

There are two noticeable problems with the Aristotelian Principle. Firstly, it is vague. The notion of "goodness" is employed loosely and its breadth is unclear. It is not apparent whether epistemic goodness and /or good outcomes are to be understood in truth-linked terms. If "goodness" in the Aristotelian Principle is truth-based, then it being so has not been warranted. Stephen Stich in his review of Bishop and Trout's book, highlights the central problem with the Aristotelian Principle: "there is a prima facie tension between B&T's Aristotelian Principle, which links good reasoning with good outcomes, and their Strategic Reliabilism, which links epistemic excellence to 'robustly reliable' reasoning strategies – that is strategies that lead to *true* beliefs."[299] Stich notes that "good outcomes" is a broad notion. It is unclear why "good outcomes" must imply attaining true beliefs. Attaining true beliefs may or may not be a good outcome, if the outcome is evaluated from a pragmatic perspective. This noticeable problem resembles the generality problem that plagues classical process-reliabilism. While for the process-reliabilist it is unclear how a process type must be characterized and evaluated, for Bishop and Trout it is unclear from which perspective "good outcomes" ought to be assessed; various different outcomes are, simultaneously, desirable from different perspectives. It is possible for one outcome to be both desirable and undesirable, depending from which perspective it is assessed.

[299] S. Stich, "Review: Epistemology And The Psychology Of Human Judgement." *Mind* 115.458 (2006). p. 392.

According to Stich, there are not any special or universal cognitive goals or virtues. He argues that "it is far ... from obvious that producing true beliefs is the standard against which strategies of reasoning should be measured."[300] For Stich, as a pragmatist, all values are located within one domain, and they cannot be divided into different groups or categories. Stich views all cognitive processes, including reasoning, as instruments. Instruments are evaluated based on how well they serve their users to attain whatever they value. Therefore, for Stich, "the good cognitive strategies for a person to use are those that are likely to lead to the states of affairs that he or she finds intrinsically valuable."[301] Truth may or may not be what an individual finds intrinsically valuable or useful. Thus, a theory that narrows the scope of "good outcomes" to attaining true beliefs is not a practical theory for everyone. It may only be useful for a particular group of people with specific intuitions and goals, such as philosophers who dedicate their lives to identify truth. However, it is precisely this type of discrimination that Bishop and Trout aspire and strive to dismantle and dismiss. By focusing on truth and truth-seeking they are doing a disservice to their own cause.

According to Bishop, "we tend to value truth, even when, from a pragmatic perspective, we shouldn't."[302] This is due to a cognitive imperfection on our part. Once we are aware of the truth, we cannot but value it. Thus, "we're stuck valuing true belief."[303] We are by default attracted to true beliefs. One of the main features of epistemic excellence is cost-efficiency. "Given our default attraction to true beliefs"[304] Strategic Reliabilism has on its side "all the

[300] S. Stich, "Naturalizing Epistemology: Quine, Simon and the Prospects for Pragmatism," in Christopher Hookway and Donald Peterson. *Philosophy and Cognitive Science*. Cambridge: Cambridge University Press, 1993. p.8.
[301] S. Stich, "Naturalizing Epistemology: Quine, Simon and the Prospects for Pragmatism," p. 8.
[302] Bishop, M.A. "Reflections on Cognitive and Epistemic Diversity: Can a Stich in Time Save Quine?" in Dominic Murphy & Michael A. Bishop. *Stich and His Critics*. Chichester, U.K.: Wiley-Blackwell, 2009. p. 129.
[303] Bishop, "Reflections on Cognitive and Epistemic Diversity: Can a Stich in Time Save Quine?" p. 129.
[304] Bishop, "Reflections on Cognitive and Epistemic Diversity: Can a Stich in Time Save Quine?" p. 130.

pragmatic advantages of incumbency."[305] Bishop argues, even though there may not be any inherent value in truth, it is more cost-efficient for us to value it. Thus, even on pragmatic grounds, an excellent reasoner ought to value truth. From this perspective, Strategic Reliabilism is indirectly pragmatic. For Bishop, truth is like a "prodigal son."[306] We cannot help but to love and be attached to him. In addition, truth-seeking for Bishop is an unavoidable intuition or feeling; a feeling that we cannot rationally overcome. Bishop, then, argues that because we cannot avoid truth-seeking, we have pragmatic grounds to seek true beliefs. In other words, we *ought* to seek truth, because we do, intuitively, value it.

It is not clear how our cognitive imperfection justifies Bishop's leap from "is" to "ought." Bishop has a case from the cost-benefit perspective. It is less costly to follow temptations or addictions than to expend resources to remove them. However, this response does not address the key issue. It does not solve the problem; instead, it justifies apathy or passivity in the face of a challenge. Bishop does not justify *active* seeking of true beliefs. Thus, the main question remains: Even if we grant Bishop that we intuitively value truth, why should we actively seek it? It may be argued against Bishop that if it is indeed a cognitive imperfection to be attracted to truths, then realizing this imperfection and acting contrary to it, towards perfection by not seeking truths, though cost-inefficient, may provide us with better outcomes, from pragmatic, practical or ethical perspectives. Bishop's response does not address the bigger problem with truth-seeking. Whether "we're stuck valuing true beliefs" or not, it does not change that fact that, at times, unrealistic optimism and placebo effects, for example, have a better outcome on our health, welfare and survival than holding true beliefs. It follows that if we correct our cognitive imperfection, and do not seek truth, we may increase our chances of welfare and survival.

[305] Bishop, "Reflections on Cognitive and Epistemic Diversity: Can a Stich in Time Save Quine?" p. 130.
[306] Bishop, "Reflections on Cognitive and Epistemic Diversity: Can a Stich in Time Save Quine?" p. 127.

The vagueness of "good outcomes" gives way to yet another problem. As shown earlier, to Bishop and Trout the acceptance of the Aristotelian Principle is a precondition for a practical epistemology. However, the Aristotelian Principle, as a consequentialist principle, would only be useful in training our reasoning strategies if the outcomes of our reasoning strategies could be objectively measured, and only if good outcomes could be clearly distinguished from poor outcomes. If there cannot be a consensus on what a good outcome is, and there cannot be, as seen above, then there cannot be a consensus on whether a reasoning strategy that leads to an outcome is good or poor. Thus, an important question remains unanswered: how should one measure and evaluate reasoning strategies if the outcomes are vague or objectively immeasurable? And if one cannot, then how is the Aristotelian Principle supposed to be helpful?

The second serious problem that faces Bishop and Trout's heavy reliance on the Aristotelian Principle is their unscientific and unempirical methods to select true beliefs as "good outcomes." Bishop and Trout pride themselves in formulating a scientific epistemic theory that does not originate from their cultural epistemic judgments and intuitions. However, as Stich, correctly highlights, "science can't either confirm or disconfirm the initial normative step"[307] Bishop and Trout in setting truth-seeking as the axis of their theory face similar problems that Quine faced in selecting truth-seeking as the goal of his endeavour. Science cannot be used to separate, group or prioritize values. Therefore, Bishop and Trout must either depend on their epistemic intuitions or on a priori methods to identify "good outcomes."

For Bishop, the questionable fact that we intuitively value truth has given rise to the epistemic intuition or assumption that we ought to value truth. Bishop and Trout's reliance on intuition stands at odds with their own position on intuition. In addition to their concern

[307] Stich, "Naturalizing Epistemology: Quine, Simon and the Prospects for Pragmatism," p. 9.

regarding "brute cultural imperialism," they state, "many naturalistically inclined epistemologists have been quite pessimistic about intuitions, and we certainly share this pessimism."[308] Although Bishop and Trout admit that there may be a role for epistemic intuition in their theory, they write, "as an empirical matter our epistemic intuitions are not as reliable as science at identifying reliable belief-forming processes."[309] Moreover, they confirm their pessimism regarding intuitions by stating, "our intuitions, philosophical or otherwise, deserve a quick death when they stand in the way of our reasoning in robustly reliable ways about significant problems."[310] Bishop and Trout make it clear that in their view intuition should not play any significant role in formulating an epistemological theory. Nevertheless, it seems they do not adhere closely to their own standpoint. As shown, their epistemic intuition plays a significant role in their application of and reliance on the Aristotelian Principle.

Bishop, on pragmatic grounds and by considering truth-seeking intuition unavoidable, argues for a truth-centered epistemology. However, it is puzzling that he also holds the view that "those of us who are skeptical about our epistemic intuitions are denying that they ought to play a significant role in epistemological theorizing."[311] If a theory *revolves around* and is founded upon an unavoidable intuition, then how can it not play a significant role in epistemological theorizing? In response, Bishop softens his view and states, "I have granted that our intuitions have some prima facie normative force. So whether it is reasonable to ignore them in our epistemological theorizing depends on whether we have an evidential source that is better than our intuitions."[312] For Bishop, in the absence of any empirical evidence, our intuitions may be

[308] Michael A. Bishop and J. D. Trout. "Strategic Reliabilism: A Naturalistic Approach To Epistemology." *Philosophy Compass* 3.5 (2008). p. 1057.
[309] Bishop and Trout, "Strategic Reliabilism: A Naturalistic Approach To Epistemology." p. 1058.
[310] Bishop and Trout, "Strategic Reliabilism: A Naturalistic Approach To Epistemology." p. 1058.
[311] Bishop, "Reflections on Cognitive and Epistemic Diversity: Can a Stich in Time Save Quine?" p. 124.
[312] Bishop, "Reflections on Cognitive and Epistemic Diversity: Can a Stich in Time Save Quine?" pp. 124-125.

used as a guiding force. Generally, we must minimize our reliance on epistemic intuitions, unless an intuition cannot be minimized, easily removed, or be replaced by an evidential source. If an intuition cannot be dismissed or is the only guiding force that we have, then it must be embraced and it could even be a pillar of our epistemological theory. Bishop's response obscures the distinction between his epistemic approach and that of SAE. It is difficult to see how any moderate or sensible SAE theory would employ intuitions in any other drastically different way.

Another problem that is rooted in the Aristotelian Principle is Bishop and Trout's approach to human welfare. They state, "the human predicament comes with some stern and demanding contours. As people, we share substantial priorities. A good life, in general, will favour such things as health, shelter, satisfying, loving relationships, and the development of talents, interests, and other capabilities."[313] None of these claims by Bishop and Trout are claims based on scientific research or as a result of empirical studies. These are very general and intuitive claims that are commonly accepted without much contemplation. They continue, "a stable environment and the firm but multiply realizable boundaries of human welfare give us reason to be optimistic about the Aristotelian Principle."[314] "Human welfare," like "good outcomes," is a vague notion. It is commonly accepted that we, humans, seek welfare. However, the problem for Bishop and Trout with this common intuitive belief is that there are not any scientific or objective or universal methods to measure and evaluate the "good life." The general welfare of individuals cannot be quantified in order to be measured. Bishop and Trout cannot scientifically, according to our contemporary sciences, for example, measure the health of a loving relationship. They encounter a serious problem when they try to judge the lives of others according to their own criteria or measuring tools. To evaluate and measure "the good life" of

[313] Bishop and Trout, *Epistemology and the Psychology of Human Judgment*. p. 21.
[314] Bishop and Trout, *Epistemology and the Psychology of Human Judgment*. p. 21.

others by relying upon one's own culture-based intuitions and criteria resembles "brute cultural imperialism," which they so strongly speak against.

At this point, we are left uncertain, from a broad perspective, regarding the use and status of epistemic intuitions, and the role and value of truth-seeking in Bishop and Trout's theory. From a narrower perspective, we are left uncertain about how we should understand the role of the Aristotelian Principle in their theory. Is it meant to lead its adherents strictly towards true beliefs or towards any "good outcomes"? Regardless of what "good outcomes" may actually be, a significant problem for Bishop and Trout is that they cannot use science to either determine what "good outcomes" ought to be or to determine whether the normative epistemic domain stands separately from the normative pragmatic domain. As a result, they cannot claim that their theory is free of epistemic intuitions and strictly descriptive at its core. There are strong reasons to believe that Bishop and Trout have relied on their epistemic intuitions and judgments at the very core of their theory to argue for a truth-centered epistemology. By doing so, they have vindicated SAE and have placed themselves on the side of SAE, which they adamantly criticize for lacking any normative force.

In short, objections against the Aristotelian Principle clearly indicate that there are some serious problems with setting it, as defined by Bishop and Trout, as the backbone of one's theory. Building a theory on shaky grounds leaves it vulnerable to collapse sooner or later. Its instability keeps researchers from seriously embracing it.

Concluding Remarks

In this chapter, I discussed Bishop and Trout's position on epistemic normativity by contrasting their theory, Strategic Reliabilism, with Standard Analytic Epistemology. First, I presented their

objections against SAE and showed how, according to them, their mission is drastically different from that of traditional epistemology. They insist that their theory is not a theory of justification and instead it is a theory of epistemic excellence. Their main aim is to enhance our reasoning and make epistemology practical and social. To do so they study Ameliorative Psychology and build an epistemic framework for it. What they learn from Ameliorative Psychology is that: "good reasoning involves the efficient allocation of robustly reliable reasoning strategies to problems of significance."[315]

To dissolve the naturalistic challenge, they claim that two components are necessary: time and observation. If we observe "what is" long enough we can learn and recommend "what ought to be." Bishop and Trout make the assumptions of Ameliorative Psychology explicit, package them into one theory and call it Strategic Reliabilism.

In this chapter it was also shown that although on the surface Bishop and Trout may appear to have bypassed the naturalistic challenge, it is clear that the challenge remains unaddressed at the root of their theory. They neither adequately justify that "we value truth" nor do they adequately explain how they leaped from that questionable fact to the principle that "we ought to value truth." It can only be assumed that they have used their own epistemic intuitions and judgments as the basis of their theory.

Another shortcoming of Strategic Reliabilism is that it does not successfully clarify how it evaluates the outcome of a reasoning strategy. Vague generalizations cannot be measured empirically, and in turn, cannot be used to vindicate either their heavy reliance on the Aristotelian Principle or their naturalized position. The vagueness of "good outcomes" makes the

[315] Bishop and Trout, *Epistemology and the Psychology of Human Judgment*. p. 174.

Aristotelian Principle ineffective and impractical. An impractical principle cannot be the guiding force to produce a practical theory.

There is much room in their theory for improvement. To avoid being imperialistic, they need to show that the truth-seeking intuition is not culture-dependent. If they cannot do so, then it can only be assumed that Strategic Reliabilism is merely another theory that describes "how privileged (mostly) Westerners with Ph.D.s in philosophy [like Bishop and Trout] engage in epistemic assessment."[316]

[316] Bishop and Trout, *Epistemology and the Psychology of Human Judgment*. p. 108.

5. The Normativity Objection and the Future of Naturalized Epistemology

"Paradigms rarely fall with decisive refutation; rather, they become enfeebled and slowly lose adherents. Confirmed practitioners can always continue, secure in faith that a new wrinkle may yet satisfy the critics. But many of us sense that working within 'the grand old paradigm' is not very rewarding"[317] said Patricia Churchland. She is one of the foremost supporters of naturalistic epistemology, and like Quine, she considers the link between epistemology and science ineliminable.

In this concluding chapter of my thesis, I will, first, briefly reiterate the central tenets of traditional epistemology. Next, I will state how Quine's naturalized program reorients epistemology. It is generally accepted that Quine's epistemic program eliminates normativity from epistemology. In this chapter, the readers will briefly be reminded of the normativity objection, its many versions, and Quine's engineering response to it. Afterwards, Bishop and Trout's radical move to focus on reasoning strategies as opposed to belief justification will resurface. They, like Quine and other naturalized epistemologists, view traditional epistemology to be highly flawed and futile, and move to redeem epistemology's reputation. Nevertheless, upon closer inspection it appears that their Strategic Reliabilism, at its core, does not fare any better in comparison with SAE and has similar shortcomings. Following a terse evaluation of Bishop and Trout's approach to epistemology, I will point to cognitive sciences as a potential avenue for naturalized epistemology to explore further for relevant helpful information.

One viable route to explore cognitive sciences is to examine whether our most recent discoveries provide us with new information and tools to tackle old problems. For example,

[317] Patricia S. Churchland, "Epistemology in the Age of Neuroscience." *Journal of Philosophy* 84 (1987). p. 546.

future research can investigate how normative principles and values are formed during the brain development and what factors influence or change them. Patricia Churchland, like Quine, looks to the human body to answer common epistemic enquiries. She focuses on the human brain, whereas Quine focused on the sensory receptors.

Nonetheless, although this approach may immensely increase our understanding of the natural roots of normative principles, it will not necessarily dissolve the problem of evaluating normative principles. It is one thing to know how normative principles are formed inside the human brain, it is another to know whether these principles ought to be or ought to remain as they are. The latter concern is evaluative, whereas the former is descriptive.

I hope that my thesis, in general, and this chapter specifically, motivate and encourage future researchers and epistemologists to be more involved with cognitive sciences to better understand the mechanics of epistemic problems and their potential solutions. However, it remains a good question whether cognitive sciences can ever adequately dissolve epistemic problems.

Central Tenets of Traditional Epistemology

Traditionally, the essential task of epistemology has been to discover and uphold justificatory principles to tell apart justified from unjustified beliefs. Traditional epistemology stands upon three foundations: first, a priori commitments, a priori reasoning or a priori truths; second, autonomy of epistemology, the presence of a clear distinction and independence from empirical progression; third, the normativity of justificatory principles.

The third foundation is the focus of this thesis. Normativity can be evaluative or prescriptive. Traditionalists are adamant that a naturalized version of epistemology cannot

produce, have or identify normative principles. For them, the epistemic justification of a belief is either completely beyond how it is formed or it depends on more factors than just the causes of its formation.

Quine's Naturalized Program

"Quine's philosophy is nothing if not naturalistic!"[318] In his view, a priori methods and armchair philosophy are futile in guiding us to knowledge. For Quine, the only existing framework is the natural framework; and whoever argues otherwise ought to, first, convincingly make a case for the existence of non-natural frameworks.

To reorient epistemology, Quine replaces the analytic-synthetic distinction in traditional epistemology, with holism in his naturalized epistemology. Plus, he substitutes the traditional a priori methods and commitments with his unregenerate realism. Quine's holism and unregenerate realism fuel and sustain his epistemic program. His holism dismantles a priori reasoning and analyticity and opens a methodological void. His unregenerate realism fills that void and makes natural scientific method of inquiry the only legitimate method of inquiry. Quine's approach makes epistemology a "chapter of psychology and hence of natural science."[319] In a nutshell, for Quine, epistemological questions are scientific questions about the acquisition of science and knowledge. His epistemology is a science that studies science; it is "science self-applied."[320]

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[318] Roger F. Gibson, "Quine On Naturalism And Epistemology." *Erkenntnis* 27.1 (1987). p. 57.
[319] W. V. Quine, "Epistemology Naturalized," in *Ontological Relativity, and Other Essays,*. New York: Columbia University Press, 1969. p. 82.

[320] W. V. Quine, D. Føllesdal and D. B. Quine, "The Interview: Williard Van Orman Quine," *Quine in Dialogue*. Cambridge, Mass.: Harvard University Press, 2008. p. 24.

The Normativity of Quine's Epistemic Program

Quine's naturalized approach is viewed to result in the eradication of normativity and, consequently, the collapse of epistemology as it is traditionally understood. He rejects this criticism and considers *normative* epistemology to be "a chapter of engineering: the technology of anticipating sensory stimulation."[321] For Quine, the relationship between the scientist and the normative epistemologist is as follows: *The scientist works to expand our theory of the world, the epistemologist works to enhance our theory of the world*. For Quine, normative epistemology is a "technological corrective"[322] that, according to its inherent normative guidelines, repairs and improves our scientific theory of the world. The more advanced and enhanced our theory, the more powerful and precise our predictions will be.

Objection Against Quine's Epistemic End

Quine's naturalistic outlook is faced against two potent, interrelated objections: the normativity objection, with its multiple versions, and the objection against the selection of truth-seeking as his epistemic end. The latter is linked to the former in the following manner: the success of Quine's engineering approach is, necessarily, linked to his instrumentalist view of normativity. The epistemic value of naturalized normative principles is measurable based on how they contribute to achieving true beliefs. Thus, for his engineering approach to be vindicated, he needs to address why he selects truth-seeking as his pre-determined goal.

From Quine's perspective, we are truth-seekers by nature. We cannot stop the expansion of our world theory, because we cannot stop observing or experiencing the world. We can either manage our swelling ontology or leave it unmanaged and risk accumulation of false and

[321] W. V. Quine, *Pursuit of Truth*. Cambridge, Mass.: Harvard University Press, 1990, p. 19.
[322] Quine, *Pursuit of Truth*. p. 50.

unjustified beliefs and sentences. Quine selects the former option, without giving a clear argument for doing so. A noticeable problem for Quine is that he cannot use science to show that truth-seeking is scientifically or universally valuable. Science alone cannot be used to separate, group or prioritize values. Quine's rejection of a priori commitments has left him defenceless against this problem. However, truth-seeking as an epistemic end may still be supported from two directions: Quine's unconventional definitions of science and truth and Kornblith's argument for accuracy in *any* endeavour.

Quine's view of science is quite broad and does not restrict science to scientific methodology or our contemporary intuitive notion of science. In a nutshell, science for Quine, is our best theory of the world; it is anything and everything that we know about the world that is sanctioned by scientists. His Tarskian definition of truth complements his view on science. Based on his Tarskian view, as our world theory expands, so does the amount of our true beliefs. Truth-seeking is what we persistently, yet implicitly, do. Quine sets truth-seeking as an explicit end to provide the opportunity to guide and enhance our knowledge expansion.

Putnam strongly argues against Quine's radical reorientation of truth. The objective of thinking is to consciously distinguish right from wrong or good from bad. If truth were dependent on what each individual could accept at any moment, or could assent to, based on particular experiences and stimulations, then thinking would not be required, since evaluation of any sort would not be necessary. For Putnam, Quine's program is a "self-refuting enterprise if there ever was one!"[323]

[323] Hilary Putnam, "Why Reason Can't Be Naturalized." *Synthese* 52.1 (1982). p. 21.

Hilary Kornblith defends Quine's selection of truth-seeking claiming that naturalized epistemology, like science, can be understood more readily when it is seen as motivated by a desire for truth. He further argues that in order for us to value *anything* we must value truth as a means. By valuing truth, we are able to *accurately* pursue our aspirations. Therefore, truth *ought* to be set as our *epistemic* end in order to achieve *any* ultimate end, *accurately*.

Different Versions of the Normativity Objection

According to Wrenn[324] there are seven versions of the normativity objection. The common denominator among all versions is that naturalized normativity is inadequate. Different versions of the normativity objection diverge in their reasons behind this inadequacy. Quine's approach manages to satisfactorily address four versions of the normativity objection, but cannot tackle the other three.

The "simple normativity objection," the "prescriptive normativity objection" and the "evaluative normativity objection" are addressed without difficulty via Quine's engineering approach. Engineering is inherently normative and can be, both, prescriptive and evaluative.

The hypothetical version of the normativity objection is hardly a concern for Quine's epistemic program. For Quine, naturalized norms are means to an end. They serve the purpose of truth-seeking. Thus, in this sense, naturalized norms are, innately, hypothetical.

The Quinean program encounters difficulty in addressing the following three versions of the normativity objection: the "categorical," the "external well-motivated" and the "internal well-motivated" normativity objections.

[324] Chase B. Wrenn, "Epistemology As Engineering?." *Theoria* 72.1 (2006): 60-79.

The latter two versions revolve around the worth of the pre-determined epistemic end. They declare that the epistemic ends of naturalized epistemology cannot be justified. The "internal well-motivated normativity objection" is a degree stronger and asserts that epistemic ends ought to be justified through epistemic means or from within epistemology. However, the selection of the epistemic goal is outside of science's domain, hence outside of Quine's scientific epistemology. In addition, Kornblith's defence of truth-seeking as an epistemic end only addresses the external version of the well-motivated normativity objection.

Nevertheless, to address both versions, simultaneously, Quine can use his holistic approach and assert that any objection that stems from dividing our theory into distinct sections is inherently defective, as the boundary lines in our world theory are quite blurry. In addition, since for Quine truth is immanent and transcendental evaluation is unfeasible, it is unrealistic and futile to demand a universally or inherently worthy epistemic end. In spite of all this, at the end, a Quinean naturalist may rightly concede that the worth of epistemic ends remains unknown. If this is a weakness of naturalistic epistemology, it is one that it cannot neutralize.

The categorical normativity objection stresses that naturalized principles cannot be categorically normative. This is a serious problem because without any categorical principles all forms of judgments, evaluations and prescriptions come to a stop. In this sense, naturalized epistemology fails to be practical or even feasible.

Although science is essentially a hypothetical venture and it cannot be denied that a scientific epistemology is innately hypothetical and lacks any categorical principles or rules, Quine may have a response. He rejects the legitimacy of the categorical objection. Categorical rules or principles are supposed to be applicable beyond any theory. Quine's philosophy does not

have any room for such transcendentalism. Therefore, to demand categorical principles or rules is to demand the impossible from Quine. For this objection to hold any weight, it becomes the responsibility of the objector to argue for transcendentalism. In this sense, it is the critic that needs to convincingly defend his criticism before demanding a response from Quine.

Bishop and Trout's Radical Departure

Bishop and Trout consider Standard Analytic Epistemology (SAE) or traditional epistemology to be impractical, purely descriptive and culture-based. They caution that to impose culture-dependent principles, universally, resembles brute imperialism. According to Bishop and Trout, shared cultural roots plus the stasis requirement prevent any radical changes in SAE.

As a result of the perceived shortcomings of SAE, Bishop and Trout pursue to formulate a theory that has strong theoretical foundations, is readily accessible to and communicable for all people, and results in real positive changes in the world. They root their theory in the empirical investigations of Ameliorative Psychology. In Chapter Four the link between Strategic Reliabilism and Ameliorative Psychology is carefully examined.

Strategic Reliabilism focuses on reasoning excellence as opposed to justification of beliefs or identifying justificatory principles. Bishop and Trout are interested in recommending excellent reasoning strategies, which have real practical effects in people's lives. They see their theory as truly normative because it has the necessary features to be action and reason guiding.

Strategic Reliabilism is founded upon the Aristotelian Principle, which is considered to be "a necessary precondition for the practical relevance of epistemology."[325] According to the Aristotelian Principle in the long run, good reasoning tends to lead to better outcomes than poor

[325] Michael A. Bishop and J. D. Trout. *Epistemology and the Psychology of Human Judgment*. New York: Oxford University Press, 2005. p. 20.

reasoning. Bishop and Trout equate "good outcomes" with attaining true beliefs without adequately justifying their decision. They argue that we *ought* to seek truth, because we intuitively value it. However, their reliance on intuition starkly contrasts their position on the use of epistemic intuitions in SAE. Furthermore, it is not clear how they leap from the fact that "we intuitively value truth" to "we ought to value truth." Ultimately, they fail to dissolve the naturalistic challenge at the very core of their theory and they fail to show why truth-seeking is good. In short, although Bishop and Trout provide a new and valuable epistemic avenue to assess, examination shows that their theory suffers from very similar, if not identical, shortcomings to those they pointed out in their criticism of SAE.

Potential Avenues for Future Research in Naturalized Epistemology

The fact that the "human brain is a product of evolution"[326] was not a concern when Descartes, Locke, Hume or other classical traditional epistemologists were seeking ways to understand and explain knowledge acquisition or justification. They were not concerned that the principal function of the nervous system is to adapt the organism to its environment in order for the organism to survive and reproduce successfully. They did not take into account that seeking knowledge, justificatory principles, norms and truth must accommodate and be in line with this evolutionary end. If transcendental or categorical truths and principles are not necessary for survival fitness, those who argue for their necessary existence must provide reasons and arguments that are compatible and consistent with our biology and evolutionary history. The converging point between the human evolution and epistemology is the human brain. To avoid moribund endeavours, we need to examine our human cognitive capacity. To understand how the human brain has evolved, what it is capable of and how it could be enhanced, it is undoubtedly

[326] Churchland, P. S. (1987). Epistemology in the age of neuroscience. *Journal of Philosophy* 84 (October):544-53. P. 548

necessary to look into the field of cognitive sciences. In short, one way to explore the link between human evolution and epistemology is to get more involved with cognitive sciences. Through cognitive sciences we can take into account neural constraints on cognitive processes, such as reasoning or conceptual analysis. Currently, we have good reasons to pursue this path.

Firstly, our technology and research in neuroscience has exponentially advanced in the past few decades. Secondly, the advent of cheap computing permits us to perform simulation of neural models in order to better study and understand cognitive processes. Finally, research and studies in animal behaviour have yielded crucial information regarding our nervous system. These reasons, according to Churchland,[327] make our time the right time to leap forward and integrate epistemology with neuroscience.

Gerald M. Edelman, a contemporary neuroscientist, agrees with Churchland and has argued for a brain-based epistemology.[328] He argues that "the solution to the problem of how we know, feel, and are aware ... must emerge from an understanding of how biological systems and relationships evolved in the physical world."[329] Edelman shares Quine's viewpoint on immanency of truth. He states, "there is no absolute truth or God's-eye view. Our view of what exists (metaphysics) is not independent of how we know it (epistemology.)"[330] Edelman's agreement with Quine provides a reason to explore the immanency of truth in the domain of cognitive sciences. If our minds are incapable of thinking universally or transcendentally, then we are unable of producing universal solutions to any problem.

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[327] Churchland, pp. 544-53.
[328] Gerald M. Edelman, *Second Nature: Brain Science and Human Knowledge*. New Haven: Yale University Press, 2006.
[329] Gerald M. Edelman, *Bright Air, Brilliant Fire: On the Matter of the Mind*. New York, N.Y.: Basic Books, 1992. p. 209
[330] Edelman, *Bright Air, Brilliant Fire: On the Matter of the Mind*. p. 250.

Moreover, cognitive sciences may play a role in the debate regarding a priori commitments and analyticity. Edelmen holds the view that "according to biologically based epistemology and qualified realism, knowledge *must* remain fragmentary and corrigible. There is no Cartesian certainty."[331] This opinion is in agreement with Quine's epistemology and Bishop and Trout's theory. It undermines analyticity and a priori commitments, as well as commitments to categoricalism. If normative principles are formulated or identified based on the knowledge that we have and if the knowledge that we have is fragmentary and corrigible, then it follows that normative principles are subject to change.

Lastly, through cognitive sciences we can explore to see whether science is value-free. Edelman, like many others, holds the view that science is not value-free. He claims that "the science touted as value-free is that based on the Galilean position, a physical science that quite deliberately and justifiably removed the mind from nature."[332] However, in biological sciences, where the mind is present, "values are necessary constraints on the adaptive workings of a species."[333] In other words, values play a necessary role in our adaptation to our environments. They affect how we interpret our experiences and histories. In turn, our understanding of our experiences and histories shapes and reshapes our cognitive systems. It may be worth looking into whether Edelman's brain-based outlook helps to bolster Bishop and Trout's grievances against the "stasis requirement." Perhaps the reason that radical changes in SAE are rare can be linked to the influences of shared values on the brains of western philosophers, who formulate SAE based on their intuitions and judgments. It would certainly be quite interesting to study whether those who share similar values also share similar intuitions and judgments.

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[331] Edelman, *Bright Air, Brilliant Fire: On the Matter of the Mind*. p. 162.
[332] Edelman, *Bright Air, Brilliant Fire: On the Matter of the Mind*. p. 162.
[333] Edelman, *Bright Air, Brilliant Fire: On the Matter of the Mind*. p. 163.

To sum up, according to Edelman, values are inherent elements of human cognitive system. By default, anything that emanates from human cognitive system cannot be value-free. Thus, based on Edelman's brain-based viewpoint, any theory, epistemic or not, that is founded upon science and is considered naturalized is not and cannot be value-free.

Concluding Remarks

In this chapter in addition to summarizing the previous chapters I attempted to show some potential avenues for future research in naturalized epistemology. One fact that is not difficult to agree upon is that as human beings we are all bound to limits of human biology. Any theory that contradicts human nature cannot be considered a viable or a relevant theory.

Nowadays, we frequently witness a new discovery or a new finding surrounding the human brain or the human cognitive system. These discoveries often have numerous implications. They provide opportunities for naturalized epistemologists to further probe into the mechanics of human brain and examine how knowledge and normative principles develop in our brains. However, at the end, it seems that the old naturalistic challenge, as a hurdle, remains standing, and scientific studies have not been successful, thus far, to dissolve this challenge. *How* principles are formed inside our brains does not seem to address whether they *ought to* form that way or remain as they are.

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