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I am submitting herewith a thesis written by Joseph R. Kuntz entitled “Naturalizing Intuition: A Cognitive Science Approach to Moral Cognitions.” I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Philosophy.

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ABSTRACT

I argue for a naturalized conception of the faculty of intuition with particular interest in intuition's role in moral contexts. I examine intuition in philosophical discourse: namely, the Classic Intuitionists G.E. Moore, W.D. Ross, and H.A. Prichard. I bring to light relevant distinctions among their conceptions of intuition. The explanation of an intuitive faculty in their philosophy has come to stand for the paradigm of intuition in moral philosophy. In the section following, I will present the objections that call into question intuition. I draw from Robert Audi and Laurence BonJour since their respective projects attempt to deal with these same objections in an attempt to formulate respective Moderate Intuitionist positions. I show how these objections raised against intuitionism are objections to the epistemological role of intuition. After, examining the objections, I present Mediocre Intuitionism and Moderate Intuitionism both of which attempt to rearticulate the use of intuition in moral thinking in ways that are less objectionable. I argue that all these conceptions of intuition are moot, inadequate or incomplete. Finally, I examine research in cognitive science related to intuition and its bearing on the development a complete and adequate conception of intuition. Empirical study of cognition illuminates how conscious and unconscious processes manifest themselves as an intuition. Surprisingly, a relatively consistent picture of intuition can be derived from various empirical studies. Cognitive science will be able to tell us something about the immediacy of intuition, whether intuition is indeed non-inferential, and about the self-evidence of intuition. In particular, the results from empirical studies of intuition affect Moderate Intuitionists' reformulation of intuition. These analyses point to a naturalized conception of intuition.
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Introduction

The following is an analysis of a fundamental cognition in moral epistemology: intuition. I venture to say that all interesting arguments in philosophy turn significantly on intuitions. Consider arguments over Justice, Euthanasia, and Abortion: Various positions in these debates are marked out by differing intuitions. Yet, to a large extent, intuition is still unexamined. I take as part of my thesis that intuition is a cognitive aspect of humans that can be studied by empirical science. I set out to unearth what intuition is by elucidating how it is used in philosophical discourse and by its study in cognitive science. Then, I draw these to concepts together to create a more coherent view of what it is that moral philosophy turns on: intuition.

I articulate Classic and Moderate Intuitionists' conceptions of intuition, articulate arguments against these positions, and evaluate their legitimacy. Ultimately, I argue for a conception of intuition that draw from philosophical literature and conclusions drawn by cognitive science.¹ Perhaps, the resulting naturalized conception of intuition is a necessary product of the methodology I have taken. I am willing to bite the bullet on this point. The very aim of this project is to advance a naturalized conception of intuition that is philosophically rigorous and consistent with cognitive science's study of the faculties of the human mind.

¹ For those crying ‘foul’ since they already familiar with the fact that most intuitionist are non-naturalist, let me preface the rest of this project with the following claim. Intuitionism’s non-naturalism has to do with the fact that moral facts are either non-natural properties or that intuited propositions contain (implicitly or explicitly) non-natural terms, e.g. ‘goodness’. I take no position on whether moral facts are non-natural. My aim here is not to naturalize the non-natural moral facts or to reduce non-natural moral terms to natural terms. Instead, I aim to offer a naturalized account of the apprehension of them by what we sometimes call ‘intuition’.
Empirical study of cognition illuminates how conscious and unconscious processes manifest themselves as an intuitive belief. Surprisingly, a relatively consistent picture of intuition can be derived from various empirical studies. Cognitive science will be able to tell us some things about intuitive knowledge - about the *immediacy* of intuition, whether intuition is indeed *non-inferential*, and about the *self-evidence* of intuition.

**Intuition in Philosophy**

Rationalists use intuition as explanation for the means of arriving at the justification of *a priori* propositions. Empiricists claim not to use intuition; however, in practice their moral arguments rely to some degree on intuitions. Robert Audi writes, "[Intuition] is certainly conceived divergently among ethical theorists, and those who find its central elements compelling may often think it easiest and better simply to argue for their position under another name than to indicate what kind of intuitionism that hold and defend their position under that rubric."\(^2\) Thus, few moral philosophers claim to be intuitionists.

While the use of intuition in philosophy is prevalent, there seem to be very few intuitionists. Intuitionism fell out of favor around the time A.J. Ayer, an emotivist, published *Language, Truth and Logic* in 1936. Since then, calling a philosopher an intuitionist has been sometimes tantamount to calling them something that is less than a rigorous philosopher.

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Intuitionism has taken a bad rap, unjustifiably burdened with objections that simply do not concern what the more plausible forms of intuitionism actually hold. Some objections concern the metaphysical views the intuitionists are reported as holding. For example, J.L. Mackie argues that intuitionism necessarily entails the existence of implausible "queer entities" such as mind-independent moral properties that would necessarily be intrinsically action-guiding, motivating, and supervene on non-moral facts: something like Platonic forms.

Epistemological projects involving intuition have burdens as well. Thus, moral philosophers have called into question intuition's epistemological grounding. Some argue intuited beliefs are unjustifiable and/or held dogmatically. Those involved in moral debates are sometimes reluctant to accept intuitions as rational justification.

Despite the burdens of objections, many philosophers use intuition, albeit under some other guise. Consider two examples: casuistry and principlism.

Casuistry is case reasoning. One decides what to do in any particular case by comparing that case to straightforward, easily adjudicated paradigm cases. The paradigm case one's case most closely resembles illustrates the possible right courses of action to take. The distinction among characteristics of a particular case and various paradigm cases can be quite fine. In particular, qualitative and quantitative differences do not submit to straightforward criteria for adjudicating. In situations where one's case is very similar to more than one paradigm case, the determination of which paradigm case one should follow seems greatly reliant on intuition.
Principlism is similar in structure. However, instead of comparing our cases to paradigm cases which show us what to do in a particular case, we apply principles to our cases. Applied medical ethics uses the principles of autonomy, beneficence, non-maleficence, and justice when deciding what to do in cases. Intuition is used to decide which principle(s) applies or how to balance competing principles. We may, alternatively, offer an argument to justify our decision for action.

In ordinary moral discourse, intuition is often used as a sort of justification for one's argument or beliefs. Consider the following claims that seem to invoke intuition as justification:

"I just see things that way."
"I suppose we have different intuitions and will just have to agree to disagree."
"My gut tells me it's wrong/right."
"It's obviously wrong/right."
"It's just wrong to have sex with a chicken."\(^3\)

There are plethora of similar claims that invoke one's intuition as reason for one's adhering to a particular position. Moral debates often turn on grounds of intuitions.

I distinguish, generally, the use of intuition in philosophical discourse into categories: Classic, Mediocre and Moderate Intuitionism. Classic Intuitionism encompasses those philosophers who argue for some form of moral realism and that we have a faculty of intuition by which we apprehend mind-independent moral facts.

\(^3\) See Jonathan Haidt, Silvia Helen Koller, and Maria G. Diaz, “Affect, Culture, and Morality, or Is It Wrong to Eat Your Dog?”, *Journal of Personality and Social Psychology*, Vol. 65, No., 4 (1993), 613-628. They examine the reaction of Brazilians and Americans to a variety of harmless situations. One of the situations they describe to respondents is the use of a chicken carcass for masturbation.
Mediocre Intuitionists use intuition in making judgments, but do not make claims to Classic Intuitionist metaphysics: e.g., John Rawls. Moderate Intuitionists attempt to reify the epistemological ends of Classic Intuitionists but do not claim that we indefeasibly grasp mind-independent moral facts or that intuitions are infallible.

The significance of these observations is twofold: the faculty of intuition can be distinguished from the moral theory of intuitionism; and a faculty of intuition is often invoked, but neither well examined nor well understood.

**Preliminary Conception of Intuition**

Henry Sidgwick in *The Methods of Ethics, 7th ed.*, articulates what he takes to be intuitionists’ general position: "Writers who maintain that we have `intuitive knowledge' of the rightness of actions usually mean that this rightness is ascertained by simply 'looking at' the actions themselves, without considering their ulterior consequences."\(^4\) Distinguishing three phases of intuitionism, Sidgwick points out that there are Perceptual, Dogmatic, and Philosophical Intuitionism. For Perceptual Intuitionism, the rightness of some particular action is immediately known (intuitions are directly grounded, similar to perceptions). For Dogmatic Intuitionism, the general rules of Common Sense are accepted and applied axiomatically. And, for Philosophical Intuitionism, the general dictates of Common Sense are accepted but there are still attempts to find a deeper explanation for these current rules.\(^5\) Later forms of ethical intuitionism reflect Sidgwick's phases of ethical intuitionism in that they usually entail three claims:

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\(^5\) *Ibid.*, 98 – 104. For a brief history of intuitionism’s development, see Sidgwick’s footnote on page 103 of *The Methods of Ethics 7th ed.*
1.) There are many basic fundamental moral principles; these have independent grounds.
2.) The basic fundamental moral principles indicate the structure of a mind-independent moral reality. (We might consider it to be ontologically distinct.)
3.) Some people can have direct (epistemic) access to the mind-independent moral reality.

The third of these claims can be evaluated independently. Importantly, I distinguish the epistemological conception of intuition from the metaphysical commitments of moral realism. Hence, I remain neutral in regard to the ontology of the moral universe and the existence of mind-independent moral facts. Since intuitionism is commonly linked to moral realism, I begin my analysis of intuition with the Intuitionists. I, however, remain neutral about the realism/antirealism debate. I will assume that some form of cognitivism is true. However, I do not commit myself to any particular version. My emphasis is on the epistemological analysis of ethical intuitions.⁶

**Epistemological Components of Intuitive Knowledge**

A faculty of intuition can give us intuitive knowledge. The following is the epistemological definition of intuitive knowledge.

One has intuitive knowledge that \( p \) when

1.) one's knowledge that \( p \) is immediate;
2.) one's knowledge that \( p \) is self-evident;
3.) one's knowledge that \( p \) is non-inferential; and
4.) one's knowledge that \( p \) is not an instance of the operation of any of the five senses.

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⁶ One might object that a characterization of intuition necessarily entails the metaphysical commitments of moral realism or other metaethical views (e.g., cognitivism). However, we can understand and make arguments about the way that we think when we intuit. We can study cognitions without having a firm account of what it is that we are cognizing. For instance, we don’t need an account of protons and electrons to study the way that scientists comprehend, understand and think about them. Likewise, we don’t need an account of mind-independent moral facts to study how it is that we cogitate about them.
Robert Audi articulates a basic kind of self-evident proposition $p$, "$p$ is self-evident provided an adequate understanding of it is sufficient for being justified in believing it and for knowing it if one believes it on the basis of that understanding."\(^7\) Immediate apprehension of a proposition is direct. Or, as H.A. Prichard puts it, "if there is to be such a thing as knowing that we know something, that knowing can be attained only directly, we in knowing the thing know directly, either at the same time or on reflection, that we are knowing it."\(^8\) Knowledge that is non-inferential is not inferred from other beliefs. I will make more of these characteristics of intuitive knowledge below.

Laurence BonJour offers a general account of the concept of intuition that is helpful for understanding what intuition entails. BonJour writes that intuition is the intellectual act in which the necessity of such a proposition is seen or grasped or apprehended as an act of *rational insight* or *rational intuition* (or, sometimes, *a priori* insight or intuition), where these phrases are mainly a way of stressing that such an act is seemingly (a) direct or immediate, non-discursive, and yet also (b) intellectual or reason-governed, anything but arbitrary or brute in character.\(^9\)

I approach intuition as a cognitive faculty, which performs the ‘act’ that BonJour calls rational insight. However, I do not claim that intuition must be a faculty completely distinct from other cognitive faculties, though it may have some similarities. G.E. Moore draws an analogy between the faculty of intuition and the

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\(^7\) Robert Audi, “Self-evidence,” *Philosophical Perspectives* 13 (1999), 206. Audi also articulates another formulation, “I construe the basic kind of self-evident proposition as (roughly) a truth such that any adequate understanding of it meets two conditions: (1) in virtue of having that understanding, one is justified in believing the proposition (i.e., has justification for believing it, whether one in fact believes it or not); and (2) if one believes the proposition on the basis of that understanding of it, then one knows it” (206).


faculty of perception. This analogy is helpful insofar as it advances Moore's position. We should not understand it as paradigmatic of all accounts of intuition.

Approaching intuition as a cognitive faculty does not commit one to admitting it is analogous to the faculty of perception nor that it is necessarily an independent faculty.

To be clear, I'm using the term 'intuition' to denote the cognitive activity that we commonly call "intuition." However, it is yet unclear if all instances that we term 'intuitions' are the upshot of the same cognitive activities. I use ‘intuition’ to refer to a particular cognitive activities that apparently produce intuitive knowledge.

**Intuitionist Epistemology: Structure of Justification**

If moral propositions express moral beliefs, then how those beliefs are justified matters morally. Foundationalist theories hold that for any belief x, x is justified if and only if x ultimately follows from some belief that is justified but not inferred from any other belief. Intuitionism attempts to foundationally justify moral beliefs. Intuitionism's moral epistemology is an attempt to provide answers to foundationalist problems, e.g. how it is that we come to have foundational beliefs. Intuited fundamental moral propositions are foundational in the structure of justifying moral beliefs.

Moral realists seek foundational justification for moral beliefs since foundational justification is consistent with how we experience that, for example,

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10 Audi is instructive here, “the idea is that if one has any knowledge or justified belief, then first, one has at least some knowledge or justified belief that is foundational, in sense that it is not (inferentially) based on any further knowledge or belief and, second, any other knowledge or justified belief one has in some way rests on one or more of these foundational elements.” Robert Audi, *The Architecture of Reason: The Structure and Substance of Rationality* (Oxford University Press, 2001), 3. Foundationalism is often contrasted with coherentism. Coherentist theories hold that each justified belief x is inferred (whether deductively, inductively, abductively, etc.) from some other belief y.
recreational baby torture is wrong. One just 'sees' that it is morally wrong. Laurence BonJour says that these sorts of intuitions add credence to the plausibility of foundational justification. He writes, "it certainly seems as though we have many beliefs that are justified, not via inference from other beliefs, but rather by sensory or introspective experience (and also *a priori* insight)."\(^{11}\)

Characteristics of intuitions are that they are self-evident and non-inferential. Thus, intuitions are reflective of the sorts of beliefs that are foundational in the structure of justification. Coherentism does not capture the structure of justification that is consistent with common phenomena of moral experience. We do not see it as a possibility that recreational baby torture could be acceptable, which might be the case under the coherence structures of justification since recreational baby torture would be morally acceptable if it coheres with other beliefs.

Foundationalist grounding of moral belief gives realist arguments for morality a strong epistemic weight since our experience of 'wrong' is that 'it just *seems* wrong', which is reflective of a foundational justification for our belief that it actually *is* wrong.\(^{12}\)

Audi and BonJour work to maintain intuitionism in a more moderate form than that of the Classic Intuitionists. Much of their effort is devoted to maintaining the foundational character of intuitions. They constitute 'non-inferential' very broadly...
in order to maintain that intuitive knowledge can be self-evident and thus foundational in its justification. I make more of this issue in following sections.

**Intuition and Cognitive Science**

It seems obvious that intuition is a normal aspect of human cognition, not unlike how the rest of the mind works. Approaching intuition as a cognitive faculty invites an empirically oriented approach to intuition. Empirical study of the mind has potential to illuminate how conscious and unconscious processes manifest themselves as intuition. Karl Popper, however, argues of creative intuitions that, "There is no such thing as a logical method of having new ideas, or a logical reconstruction of this process. My view may be expressed by saying that every discovery contains 'an irrational element,' or 'a creative intuition'."\(^\text{13}\) The empirical work that I present later in this project will contradict Popper's 1968 assumptions that there is not a logical reconstruction of the intuitive process.

A recent development in the discipline of philosophy has been an emphasis on 'Experimental Philosophy'. Shawn Nichols is part of this movement. He writes

> Researchers at the intersection of philosophy and cognitive science have begun systematic exploration of folk concepts like *wrong*, *knows*, and *refers*. There is nothing novel in wanting to characterize these concepts - that has been a preoccupation of philosophers for millennia. The novelty of the recent work lies in the appropriation of social scientific methodology to investigate what has heretofore been a largely *a priori* enterprise. This work also has potentially wide ramifications for cognitive science since it's plausible that these concepts that have attracted philosophical attention also guide cognition in central domains like moral evaluation, mental state attribution, and semantic judgment.\(^\text{14}\)

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Some philosophers might object that this sort of project belongs in the natural sciences and not the work of moral philosophers. I beg to differ. Just as it is necessary in ethics to be clear about the facts of the case, it is just as (if not more) important to be clear on the facts of how we arrive at judgments about that case. Moral thinking is a cognitive activity. Cognitive activities are subject to empirical examination in ways they formerly have not been. Philosophers would be naive to ignore such examinations.

Shawn Nichols and William Casebeer have produced projects that makes cognitive science relevant to moral philosophy. In *Sentimental Rules,* Nichols uses cognitive science to argue for a Humean account of emotivism.\(^{15}\) Casebeer, in *Natural Ethical Facts,* uses a broad range of sciences, including cognitive science and evolutionary biology, to give an account of moral reasoning.\(^{16}\) Thus, I'm not alone in thinking that science and moral philosophy are both important in answering questions about moral reasoning. Moreover, a naturalized concept of intuition seems plausible.\(^{17}\) Michael Tye points out that


\(^{17}\) I will make the general claim that a naturalized conception of intuition is one that can be informed by the study of empirical science. I make no claims here to reductivism or physicalism, though I do reserve the opportunity to take up those arguments. This relates to naturalizing intentionality or as Thomas Bontly refers to it as ‘physicalizing intentionality’. He is interested in the possibility of giving a physicalist/reductivist account of intentional relations, i.e. one’s relation to objects, properties, or facts that are represented as cognitive content; also an interesting take on ‘naturalizing’. See Thomas Bontly, ”Should Intentionality be Naturalized?” in *Naturalism, Evolution and Mind: Royal Institute of Philosophy Supplement 49: Proceedings of Royal Institute of Philosophy Conference held in Edinburgh, Scotland 1999,* ed. D. M. Walsh (Cambridge: Cambridge University Press, 2001), 43 – 60.
The mental is studied by psychology. Psychology is a science no different in its procedures and laws from other sciences. So of course, the mental is part of nature in ways [...] Naturalism with respect to the mental, once properly explicated, is really beyond question.  

A caveat is necessary. Science itself is fallible - and for many different reasons. Thus, what science can reveal for philosophers should not be taken lightly, but, also, should not be accepted without scrutiny. Cognitive science uses human behavior to study human cognition. By hypothesizing hypothetical constructs, functions or mechanisms of the mind that are supposed to be responsible for the behaviors being tested, cognitive scientists may not be testing the function of cognition that is responsible for intuition. Researchers may merely test part of the intuition's functioning. Also of concern is that experiments and studies in cognitive science do not usually test realms of moral knowledge - if there are indeed ontologically distinct moral realms. We may have a separate faculty of intuition that relates only to what we might call 'moral objects'. However, if scientists study behavior, then, as far as behavior is linked to cognition, scientists can say something substantive about how the mind works in regard to making moral judgments.

Several studies and papers in cognitive science offer evidence concerning intuition. Particularly interesting is what can be said of immediacy, self-evidence and yield non-inferential knowledge ('non-inferentiality'). Moreover, it will be of interest to examine how cognitive science will weigh in on objections to intuitionism.

As scientific theories about human cognitions change, so should philosophers' thoughts about how we arrive at judgments. A healthy conversation between

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cognitive science and philosophy is due, and it is this conversation this project aims at.

Outline of Thesis

I will begin by examining some of the history of intuition in philosophical discourse: namely, the Classic Intuitionists G.E. Moore, W.D. Ross, and H.A. Prichard. I bring to light relevant distinctions among their conceptions of intuition. The explanation of an intuitive faculty in their philosophy has come to stand for the paradigm of intuition in moral philosophy. Since my aim is to examine the concept of intuition, I will pay relatively little attention to other, though substantive, areas of their moral philosophies. This is, however, unfortunate since each has influenced the development of moral thought. In the section following, I will present the objections that call into question intuition. I draw from Audi and BonJour since their respective projects attempt to deal with these same objections in an attempt to formulate respective Moderate Intuitionist positions. I show how these objections raised against intuitionism are objections to the epistemological role of intuition. After examining the objections, I present Mediocre Intuitionism and Moderate Intuitionism, both of which attempt to rearticulate the use of intuition in moral thinking in ways that are less objectionable. I argue that both these conceptions of intuition are either moot, inadequate or incomplete. Finally, I examine research in cognitive science and its bearing on developing a complete and adequate conception of intuition. In particular, I look at how the results from empirical studies of intuition relate to criticisms and

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19 There may be others in this group. But, I offer these as paradigmatic of the group.
20 In the following, I refer to ‘Moderate Rationalist,’ Laurence BonJour, and ‘Moderation Intuitionist,’ Robert Audi, as one group: Moderate Intuitionists.
objections to intuitive knowledge. These analyses point to a naturalized conception of intuition.
Chapter 1

The Classic Intuitionists

Classic Intuitionists are G.E. Moore, H.A. Prichard, and W.D. Ross. They attempted to show how moral knowledge can have foundational justification. Each thought intuition was essential in identifying moral facts, arguing that morality is woven into the structure of the universe and that we have a faculty of intuition that, in some sense, could 'see' or apprehend moral facts. Moral facts, or moral properties, are mind-independent. They exist independently of anyone's apprehension of them. Thus, the Classic Intuitionists are moral realists. Moral realism is to be contrasted with moral antirealism, which holds that there are no mind-independent moral facts. There are a number of metaethical positions that are considered antirealist: e.g., Ayer's emotivism.\(^\text{21}\)

Moral realism is a difficult position to defend since moral facts seem to be, as J.L. Mackie argues, metaphysically 'queer'. The Classic Intuitionist's epistemological project, once divorced from its metaphysical entanglements, is salvageable. Important to untangling intuitionism is to distinguish the epistemic from the ontological commitments. In the following sections, I outline the view of Classic Intuitionists and explain criticisms of their positions.

G.E. Moore

G.E. Moore, in *Principia Ethica*, presented arguments for metaethical claims: namely about the subject matter of ethics, moral semantics, moral metaphysics and

\(^{21}\) Ayer’s emotivism served to undermine the intuitionists metaphysical position concerning the existence of mind-independent moral facts. Ayer argued that moral claims were expressions of one’s emotional disposition towards particular acts, more like expressions of opinions rather than statements of about facts.
moral epistemology.\textsuperscript{22} Moore thought that the notions of goodness and badness were the most basic moral concepts; other moral terms such as rightness, wrongness and virtue are definable by them. Moore's influence on the semantics of ethics is recognizable even now. He famously made the "Open-Question Argument," arguing that reductive accounts of the good that attempt to define 'good' by some other normative or non-normative term would fail since 'good' is "simple," "unanalyzable" and "non-natural." Moral properties conceived thusly avoid the pitfalls of what Moore calls the "Naturalistic Fallacy."\textsuperscript{23}

Moore's metaphysics entailed a sort of moral realism. Roughly, Moore held that there are moral properties that exist independently of the beliefs, concepts, and dispositions of individuals or groups of individuals. Moore's non-naturalism rested upon the claim that morality, e.g. 'goodness', could not be the subject matter of empirical science. The naturalized conception of intuition that I argue for here and Moore's non-naturalism do not conflict. Moore's claim was about the content of moral discourse, i.e. that normative terms were ontologically different from non-normative terms. I do not make claims to the contrary. My arguments concern the way in which we apprehend those terms: Our thinking, understanding and apprehending of morality can be the subject of natural science.

\textsuperscript{23} When we attempt to identify normative terms like 'good' with natural kind terms like pleasure, Moore argues that we commit the ‘Naturalistic Fallacy’ since saying, e.g. ‘x is pleasurable’ is not the same thing to say ‘x is good’. Moreover, such claims are subject to the ‘Open-Question’ Argument since we can still ask ‘Is it good that pleasure is good?’ (“Is it good that it is good that pleasure is good?” etc. etc.).
Moore argued that moral properties are non-natural and simple. Good, qua moral property, is simple since it is not composed of more basic parts. Moral properties are non-natural properties since they cannot be the study of empirical sciences. Intuition yields knowledge of simple, non-natural moral properties. That good is simple and non-natural evidences the fact that it is also unanalyzable since there is, in essence, nothing left to say of a simple property. Moreover, its non-naturalness precludes it from empirical inspection. Despite being simple, non-natural and unanalyzable, we still seem to have knowledge of moral properties.

For Moore, intuitive knowledge occurs 'in us' in much the same way that the faculty of perception yields knowledge. We visually perceive yellow and hence know 'yellow'. Likewise, Moore maintains that we have a faculty of intuition that in some sense 'sees' good. Intuitive knowledge is foundational, and similar justification is attributed to knowledge from visual perceptions. We do not infer 'yellow' from other facts or properties. We see that something is 'yellow', which provides foundational justification for our belief that it is yellow. Moral properties are grasped by intuition in the same way: we just 'see', in an intuitional sense, that some act is, e.g., 'good'.

Moore distinguishes two classes of intuited propositions, distinguished by what makes them incapable of proof or disproof.\textsuperscript{24} In regard to what makes an

\textsuperscript{24} He says, “In order to express the fact that ethical propositions of my first class are incapable of proof or disproof, I have sometimes followed Sidgwick’s usage in calling them ‘Intuitions.’ But I beg it may be noticed that I am not an ‘Intuitionist,’ in the ordinary sense of term. […] The Intuitionist proper is distinguished by maintaining that proposition of my second class propositions which assert that a certain action is right or a duty – are incapable of proof or disproof by any enquiry into the results of such actions. I, on the contrary, am no less anxious to maintain that propositions of this kind are not
ethical proposition intuitively known, Moore stresses, "I mean merely to assert that they are incapable of proof; I imply nothing whatever as the manner or origin of our cognition of them."  

W.D. Ross

Ross, probably the best-known intuitionist, attempts to systematize our common sense ideas about duties. He articulates his Intuitionism in *The Foundations of Ethics* and *The Right and the Good*.  

He argues that our basic moral duties of fidelity, reparation, gratitude, non-maleficence, and justice (i.e. promotion of the good) are known to some persons of "sufficient mental maturity" by intuiting fundamental moral propositions.

According to Ross, there is a "system of moral truth, as objective as all truth must be." Ross understood this system of moral truth to provide irreducible plurality of moral grounds that support our duties. This was obvious to Ross since there seems to be no one ground for one's self-evidently realized duties.

One comes to grasp the fundamental moral propositions expressing our duties with experience and over time. Those propositions are self-evident. Ross writes in *The Right and the Good*,

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‘Intuitions,’ than to maintain that propositions of my *first* class are Intuitions.” G.E. Moore, *Principia Ethica* (Cambridge: Cambridge University Press, 1959), x.

25 Ibid.


28 For example, I have a direct duty both to make those around me less miserable and to ensure that the society is a just one. There are a number of direct duties that I may have of which none is superior to others. Note, however, one could argue that even if duties have differential grounds, duties can be systematized. B.C. Postow, “A Partial Application Procedure for Ross’s Ethical Theory,” *Journal of Philosophical Research*, 31 (2006), 239-248.
[General principles of duty] come to be self-evident to us just as mathematical axioms do. We find by experience that this couple of matches and that couple make four matches, that this couple of balls on a wire and that couple make four balls: and by reflection on these and similar discoveries we come to see that it is of the nature of two and two to make four. In a precisely similar way, we see the *prima facie* rightness of an act which would be the fulfillment of a particular promise, and of another which would be the fulfillment of another promise, and when we have reached sufficient maturity to think in general terms, we apprehend *prima facie* rightness to belong to the nature of any fulfillment of a promise. 29

Ross argues that through experience one comes to recognize that particular sorts of situations contain certain duties in the same way as in other situations we recognize instantiations of mathematical axioms. Through intuition, we see that these are our *prima facie* duties; these duties are self-evident. Thus, the apprehension of mind-independent moral facts by intuition gives moral knowledge of the mind-independent system of moral reality.

Self-evident moral propositions apprehended by intuition require no other justification for their truth than that they are apprehended and understood. However, that does not entail that they are, as Moore claims, 'beyond proof.' One can offer reasons for accepting that our *prima facie* duties are true without invoking intuition: i.e., some things might be knowable both through intuition and in other ways, such as by inference or argument.

The rightness or wrongness of a particular act is part of the mind-independent moral order of the universe: there is some moral quality, character or property that is apparent to us, that quality or character exists objectively, and has some normative moral force. In the *Foundations of Ethics* and *The Right and the Good*, Ross argues that we do not perceive rightness (or wrongness) directly. "Rightness is always a

resultant attribute, an attribute that an act has because it has another attribute."  

Rightness is always a part of the act considered in toto. It is contained in the act itself and the effects to which it is causally connected (construed broadly). The rightness of my saving a child's life is connected not only the act of saving the child, but that I save the child and that child does not grow up to murder hundreds of people. For if it was the case that I save a child and the child turns out to be a mass murderer, my act would be proportionally less right.  

I, however, still have the duty to save the child, but I also have the duty to prevent the suffering of all those that the child will kill. 

Ross is an ethical pluralist. For him, there are several prima facie duties that apply to any particular situation. To choose which duty we follow is an attempt to choose our actual duty. However, "Our judgments about our actual duty in concrete situations have none of the certainty that attaches to our recognition of the general principle of duty." One's belief is justified when it is an expression of knowledge that is either self-evident or a valid conclusion of self-evident premises. Beliefs about the rightness of one's act do not have either of these criteria. Ross's Intuitionism does not claim to be able to decide with any certainty what to do in hard cases. Ross bites the bullet, accepting that we may judge wrongly about what duty we are supposed to act on in a particular situation. This is a bit alarming; however, Ross notes, "we are

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31 The example I use may be exaggerating the relevance of the consequences to the rightness of the act. However, that consequences are included as part of what makes acts right or wrong seems to be what Ross is saying in The Foundations of Ethics. See pg. 183-191.
32 “Goodness is a resultant attribute; it belongs to anything to which it does belong, because of the nature of the thing in some respect or other – because, for instance, it is a brave or not cowardly act. And while even the vaguest apprehension of the goodness or badness of anything depends on some previous insight into the nature of the thing, an apprehension of the degree of its goodness will depend on close study of its nature, upon which the apprehension of the degree of its goodness supervenes, not as a logical conclusion but as a psychological result" (Ibid., 184).
33 Ross, The Right and the Good, 30.
more likely to do our duty if we reflect to the best of our ability on the *prima facie* rightness or wrongness of various possible acts in virtue of the characteristics we perceive them to have, than if we act without reflection. With this greater likelihood we must be content."\(^{34}\)

**H.A. Prichard**

In "What is the Basis of Moral Obligation?", Prichard's concern is not only how we come to have knowledge of moral principles but how those principles relate to moral motivation.\(^{35}\) It could be the case that one might have knowledge of moral principles, know them self-evidently, but fail to act or to see that one should act on them. Prichard points out, however, that this is not how we experience moral obligations.

Prichard examines the following sorts of moral principles (for action):

"'Because I ought to stimulate *any* higher part of my nature,' or 'because I ought to do *any* old friend a service which I alone can render' or 'because I ought to pay *anything* I owe or have promised to pay'."\(^{36}\) He finds that these principles admit of no other reason for their being true than "that anyone must either recognize the truth of the principle directly, i.e. as self-evident, or fail to see it altogether. This implies not only that a further reason is not forthcoming but that it is not needed, the reason lying within the principle itself."\(^{37}\)

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\(^{34}\) *Ibid.*, 32.


Prichard also holds that a principle's self-evidence is immediate: "[T]hat I have promised to pay a man so much is the reason why I ought to pay it, i.e. the connexion [sic] between the obligation to pay and my having promised is immediate, i.e. that the one directly necessitates the other, as the straightness of a line necessitates its being the shortest way between its ends." \(^{38}\) Immediate apprehension directly necessitating one's obligation, Prichard argues, is fundamental in moral deliberation. That some other ground can be provided for our feeling of rightness is not necessary to justify that moral principles are true. \(^{39}\) Prichard writes:

> We recognize, for instance, that this performance of a service to X, who has done us a service, just in virtue of its being the performance of a service to one who has rendered a service to the would-be agent, ought to be done by us. This apprehension is immediate, in precisely the sense in which a mathematical apprehension is immediate, e.g., the apprehension that this three-sided figure, in virtue of its being three-sided, must have three angles. Both apprehensions are immediate in the sense that in both insights into the nature of the subject directly leads us to recognize its possession of the predicate; and it is only stating this fact from the other side to say that in both cases the fact apprehended is self-evident. \(^{40}\)

Prichard argues that there are two ways of apprehending: reflectively and directly. Directly apprehending our moral obligations, which motivate agents to act, is, on Prichard's account, an act of intuition. "The sense that we ought to do certain things arises in our unreflective consciousness, being an activity of moral thinking occasioned by the various situations in which we find ourselves." \(^{41}\)

\(^{38}\) *Ibid.*

\(^{39}\) In regard to justification of intuited principles Prichard writes:

> If, e.g., we refer to the act of repaying X by a present merely as giving X a present, it appears, and indeed is, necessary to give a reason. In other words, wherever a moral act is regarded in this incomplete way the question “Why should I do it?” is perfectly legitimate. This fact suggests, but suggests wrongly, that even if the nature of the act is completely stated, it is still necessary to give a reason, or, in other words, to supply a proof. H.A. Prichard, “Does Moral Philosophy Rest on a Mistake?”, *Mind*, New Series, Vol. 21, No. 81 (January, 1912), 28.


\(^{41}\) *Ibid.*, 36.
obligations are apprehended directly, yet, when the demand to justify these obligations is placed on the agent, he will be at a loss to offer the same proof to others. The proof is that moral obligations are directly apprehended. One may, however, by an act of reflective consciousness "realize the self-evidence of our obligations, i.e., the immediacy of our apprehension of them." One can show that they are true only so far as we can show that they have the property of being self-evident. One cannot offer the same proof as when intuitions are derived from unreflective consciousness.

Like Ross, Prichard is a pluralist. There is no single ground from which all principles are deduced. A single ground would yield only one kind of duty. It seems obvious to Prichard that there are multiple kinds of duties or obligations that we have, given our relative dispositions in regard to different individuals and various circumstances.

Prichard argues that once one finds that one has a particular obligation by virtue of one's relation to a situation, one then sees that this obligation can be held elsewhere. "Hence we do not deduce the particular obligation from the principle apprehended first. We first recognize the particular obligation and then by reflection on it discover the principle, i.e. formulate to ourselves that general character of the act which render, it, or any act like it, an obligation."

Prichard on conflicting obligations is pragmatic. He holds that when we do have obligations that conflict, we should notice "(a) that obligations admit of degrees,

\[\text{Ibid.}\]

\[\text{This point might be made better by contrasting a plurality of grounds for moral principles with the singular ground that John Stuart Mill uses: the maximization of utility.}\]

\[\text{Prichard, "Does Moral Philosophy Rest on a Mistake?", 5.}\]
(b) that in a case of conflict the question is simply 'Which obligation is the greater?',
(c) that in the end the question can only be answered by our immediate recognition,
when all the circumstances have been taken into account, that one is the greater or the
greatest, (d) that the problem is often one of extreme difficulty, but (e) that in any
case there is no general criterion for solving it."\textsuperscript{45} Here too, similar to Ross, we see
that Prichard bites the bullet on how to decide difficult cases.

**Summary of Classic Intuitionist Positions Regarding Intuition**

The Classic Intuitionists argue that intuition yields intuitive knowledge.

Intuitive knowledge is, *in some sense*, self-evident, immediate, non-inferential, and
not derived from the five senses.\textsuperscript{46} Each intuitionist may hold a slightly different
account of what these characteristics entail. I shall now point out these differences
and the related problem of 'understanding'.

**Self-evidence**

Moore argued that self-evident propositions are beyond proof or disproof, i.e.,
that no *argument* can be offered that would show their truth or falsity. Moore
distinguished reasons for propositions being true, "logical reason," from the reasons
for holding a proposition to be true.\textsuperscript{47} A proposition whose truth is contained in
itself, not inferred from other propositions, is logically true, which is different from

\textsuperscript{45} *Ibid.*

\textsuperscript{46} The standard five senses play some sort of role in the apprehensions of intuition. Experience seems
necessary for anyone to understand what it is that they are intuiting. Experience plays the role
allowing agents to gain the background knowledge necessary for understanding the contents of intuited
propositions. Ross and Prichard seem to hold this view: Moore less so since experience and
background knowledge seems less relevant for agents intuiting self-evident propositions. Moore
grounds intuited propositions less in the epistemology of apprehended mind-independent moral facts
and more in the ontological properties he argues they must have: namely that they are simple, non-
natural and unanalyzable.

\textsuperscript{47} Audi uses the terms "ontic reasons" in *The Good and the Right*, 13.
holding that the proposition is true *because* it has these properties or *because* that one has apprehended it as having these properties. Prichard holds a similar epistemological position. Prichard argues that principles admit of no other reason for their truth than that one "must either recognize the truth of the principle directly, i.e. as self-evident, or fail to see it altogether." Prichard is consistent with Moore concerning self-evident apprehension. Both hold that intuition is the only way to recognize the self-evident truth of moral principles (as opposed to recognizing *that* a proposition is true because it is self-evident). Contra Moore, Ross argues that some other argument can be given concerning the truth of a proposition, even if the proposition cannot be grasped intuitively. Ross must, however, admit that if fundamental moral propositions are not grasped intuitively, even if the can be, one will not have foundational grounds for believing those positions are true.

**Immediacy**

It is necessary to distinguish senses of immediacy since they are sometimes confused, equivocated, or just overlooked. The epistemological sense of immediacy has to do with the directness of apprehension: arriving at the truth of some proposition is not the consequence of a process. The phenomenological sense of immediacy is a change that occurs instantaneously or quickly, relating to temporality. Our experience of having an intuition may be that the solution appears to us to be

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48 Audi argues that Moore does not actually hold the position that self-evident propositions are beyond proof since Moore thought there could be reasons for hold the proposition to be true apart from the logical reason for its being true. However, Audi misconstrues Moore’s point about reasons. Reasons provide justification for believing. These are the reasons that Audi refers to as “evidential reasons” (Audi, *The Good and the Right*, pg. 13.) That the truth of a proposition is necessarily contained within its content provides justification for our believing it to be true but it does not provide another sort of proof for it being true.

49 Prichard, “Does Moral Philosophy Rest on a Mistake?”, 36.
immediate and direct in the phenomenological sense, yet the proposition may not in fact be epistemologically direct.\textsuperscript{50}

As I understand Ross, he emphasizes that intuition occurs immediately, sometimes only after a long period of coming to grasp the content or meaning of propositions. The act of coming to understand the contents of a self-evident proposition may take some time; however, the intuiting is itself epistemologically and phenomenologically immediate. As I understand Moore and Prichard, they take similar positions in regard to immediacy; however, they do not emphasize that one may need to reflect on or think about a proposition to apprehend it. Self-evident propositions are apprehended immediately, in both the epistemic and phenomenological sense.

'\textit{Non-inferentiality}'

Moore, Prichard and Ross agree that intuited knowledge is neither inferred from the five senses nor from other beliefs. The understanding of intuited propositions delivers (directly) the truth of the proposition, without inference. One might have to obtain a certain quantity or set of experiences to understand the content of the propositions. Nevertheless, the meaning of terms is not taken as derived or inferred from the senses. Understanding a self-evident proposition in no way entails the use of inference to arrive at the truth of the proposition. Moore makes this point more apparent when drawing the analogy between perception and intuition. Intuitive

\textsuperscript{50} Some unconscious processing that is stepwise may be occurring ‘under the surface’, as I show later when I present data from cognitive science. Thusly, epistemologically, there is no directness, but phenomenologically, we have the experience of directness. One may also hold a belief occurrently and that belief be immediate, in the epistemological sense. A proposition may be immediately known, in the epistemological sense, but not instantaneous since change from a non-belief state to holding a dispositional belief may take a relatively long period of time, but not be the result of inference.
knowledge is not derived from the senses, but, in a similar way, is apprehending by 'seeing'.

... the Remaining Problem

What is problematic for Ross and Prichard is the relationship between 'self-evidence' and 'understanding'. Fundamental moral propositions that are self-evident are also non-inferential. However, that not everyone intuits these propositions - supposedly since not everyone understands them in the relevant way - leads us to question how and why we understand them in a particular way. 'Understanding', thus, is particular to a (perhaps broad) set of experiences. Hence, apprehending particular self-evident propositions is, in some sense, dependent on a set of experiences (as far as that set of experiences is required for 'understanding'). This leads me to wonder if one must infer from those experiences to grasp the truth of the propositions. If such an inference is indeed involved in the apprehension, then those propositions are no longer self-evident. What intuitionism requires is an adequate understanding of 'understanding'. BonJour and Audi attempt to rectify this problem by construing 'understanding' and non-inferentiality more broadly. Their broad conception of understanding allows that the meaning of propositions is entailed or contained within the proposition itself. I will take this up below when I address the Moderate Intuitionists and cognitive science.
Chapter 2

Problems for Classic Intuitionism: The Epistemological Burdens of Intuition

The following are objections to intuition commonly attributed to Classic Intuitionism. Any plausible intuitionism must deal with these objections. I am not interested in the metaphysical project of substantiating the existence of mind-independent moral facts. Thus, the objections are geared to present the epistemological burdens of an intuitive faculty.\(^{51}\) I present them in short and then lay them out more explicitly, where appropriate, as I present responses to the objections.

(1) **The Dissensus Objection**: Intuitions as far as they are self-evident are implausible since if basic principles of ethics are self-evident, there would not be so much disagreement over what they are.\(^ {52}\) Disagreement may come on two counts: what one person holds as self-evident either (a) fails to seem self-evident to a second person; or (b) is in conflict with some proposition another person sees as rationally self-evident.\(^ {53}\)

(2) **The 'Non-Discursive' Objection**: Intuition is un-evaluable since it has no steps or functions to evaluate for adequacy.\(^ {54}\)

(3) **The Dogmatic Objection**: Intuition is "subjectively compelling" even when it is the product of bias: emotional or intellectual.\(^ {55}\)

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\(^{51}\) J.L Mackie’s ‘Argument from Queerness’ in a widely cited objection to Intuitionism. See J.L. Mackie, “The Subjectivity of Values,” in *Essays on Moral Realism*, ed. Geoffrey Sayre-McCord (Ithaca: Cornell University Press, 1988). However, his objection concerns the metaphysics of mind-independent moral facts and our ability to know them. My concern here is the epistemology of the faculty of intuition. As far as such a faculty is able to be the study of empirical science, I am able to avoid his objection.

\(^{52}\) Audi, *The Good in the Right*, 60.

\(^{53}\) BonJour, 138.

(4) **The Meta-justification Problem**: Intuitionists are unable to provide meta-justification, "a second-order reason or justification for thinking that accepting rational insight [intuition] or apparent self-evidence is at least likely to lead to believing the truth."\(^{56}\)

(5) **The Causal Objection**: There is no causal relation between an intuited belief that \(p\) and the object or situation to which \(p\) pertains.\(^{57}\)

(6) **The External Criterion Problem**: Establishing independent criteria for intuition to provide reliable beliefs is "inherently futile."\(^{58}\)

BonJour and Audi do a decent job of responding to these objections. Nevertheless, more can be said in reply to their positions when we elucidate the cognitive functioning of intuitions. Thus, showing how an intuitive faculty functions can offer something to be said for each of the above objections. In the following, I offer replies to these objections and examine the Moderate Intuitionist positions of Audi and BonJour, who attempt to reconcile Classic Intuitionism with its objectors. Each of these objections in some way challenges the characteristics of intuitive knowledge (self-evidence, immediacy, and 'non-inferentiality'): The Dissensus Objection, Dogmatic Objection, and External Criterion Problem relate to issues concerning self-evidence, while The 'Non-Discursive' Objection, Meta-justification Problem and Causal Objection relate to the immediacy and that intuitive knowledge is

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\(^{55}\) "What is to prevent any person who is emotionally biased or intellectually dogmatic from regarding a claim that seems subjectively compelling to him as a product of such insight [intuition]?" (*Ibid.*).

\(^{56}\) *Ibid.*, 143.

\(^{57}\) *Ibid.*, 156. Alexander Miller makes a similar objection. He argues that moral realists are "epistemologically bankrupt": moral facts are not causally related to the beliefs we purport to have of them. Alexander Miller, *An Introduction to Contemporary Metaethics* (Cambridge, UK: Polity Press, 2003), 35-6.

\(^{58}\) BonJour, 136.
non-inferential. However, Audi and BonJour's replies are inadequate. After explaining the Intuitionist responses to these objections, I, in the following sections, turn to cognitive science in an attempt to buttress intuition against these inadequacies.

Replies to the Objections to Classic Intuitionism

The Dissensus Objection

Two instances of dissensus are problematic for self-evident intuitions: (1) a proposition that is self-evident to one person fails to seem self-evident to a second person; and (2) a self-evident proposition is in conflict with some proposition another person sees as rationally self-evident. (2) is further divided: (a) there could be a conflict over which self-evident moral principle should be followed since the ends which they prescribe are mutually inconsistent; (b) there could be an apparent logical contradiction between self-evident propositions.

We might describe (2a) cases in Ross's terminology: there is a conflict between two individuals over which *prima facie* duty should be the actual duty. In (2b) cases, the logical contradiction is such that one could not consistently hold that both propositions are true at the same time: e.g., one could not consistently hold that both A and ~A are true propositions.

Ross bites the bullet in (2a) set of dissensus cases. These are disagreements about how one's *prima facie* duties should be acted upon. Since there are a plurality of grounds for the *prima facie* duties, there is not a single principle or overarching framework from which they are derived. Without a principle or framework to adjudicate over what duty ought to be one's actual duty, there is room for practical disagreement over what *prima facie* duty is one's actual duty in cases where more
than *prima facie* duty applies. These are practical disagreements over how Rossian intuitionism ought to be applied. I have little interest in these issues for this project.\(^5\)

I am, however, interested in (2b) sets of cases. In these cases, agents disagree over which of the contradictory self-evident propositions are self-evident. The disagreement concerns the notion of self-evidence itself. BonJour argues that such dissensus is resolvable through discourse over a shared set of premises or by reflecting on actual cases. "Thus it is simply not true that the absence of relevant shared premises must result in either stalemate or the employment of non-rational means of persuasion."\(^6\) By either becoming more clear on the meaning of the contents of the proposition or considering the proposition more broadly, as situated in context, both parties will come to some sort of agreement. Notice that the dialogue is not over the nature of the self-evidence, but over some other set of premises that would alternatively justify the proposition. How far this maintains their non-inferential character is questionable. That self-evident intuitions are non-inferential leads to another objection, The 'Non-Discursive' Objection.

Alternatively, we might chalk (1) and (2b) cases up as Ross does to the lack of adequate understanding of the meaning of the contents of the proposition. Thus, when the second agent comes to understand the proposition she will recognize the truth entailed by its self-evidence. I think that this sort of reply makes light of the objection.

\(^{5}\) Audi, in *The Good and the Right*, argues that combining a Rossian Intuitionism and Kant’s Categorical Imperative can systematize the basic fundament moral principle of Rossian Intuitionism.

\(^{6}\) BonJour, 140.
Audi draws our attention to a number of ways to understand self-evidence: immediately self-evident vs. mediated self-evident; conclusions of inference vs. conclusions of reflection; and rational intuitionism vs. empirical intuitionism. Immediately self-evident propositions are those that are "readily understood by normal adults (or by people of some relevant description, e.g. the mentally mature Ross spoke of)."\textsuperscript{61} Mediately self-evident propositions differ in that "their truth can be grasped by such people only through the mediation of reflection."\textsuperscript{62} Audi, however, does not construe this sort of mediated reflection as offering inferential justification. Rather, this sort of reflection reaches "the kind of understanding required to see the truth of the proposition 'in itself'."\textsuperscript{63} Mediately self-evident proposition are not conclusions of inference: they are not "premised on propositions noted as evidence."\textsuperscript{64} They constitute a kind of conclusion of reflection: it comes about after thinking about the object intuited as a whole. There are no premises upon which the truth of the proposition is based.\textsuperscript{65}

\textsuperscript{61} Audi, \textit{The Good and the Right}, 51.
\textsuperscript{62} \textit{Ibid.}, 51.
\textsuperscript{63} \textit{Ibid.}
\textsuperscript{64} \textit{Ibid.}, 45.
\textsuperscript{65} \textit{Ibid.} Note: Conceived thusly, the dissensus (2a) sets of cases seems more interesting. If the proposition in question is not mediately self-evident, but immediately self-evident (or, more problematically, \textit{obviously} self-evident), then the dissensus is not explained by the mere lack of reflective understanding. Consider the following: ‘If no philosophers are women, then no women are philosophers.’ The antecedent and consequent are false; thus, the conditional is true. This proposition is immediately self-evident to seasoned introductory logic instructors. The logic instructor understands this immediately without reflection. For her, the structure of the proposition delivers its truth. However, many introductory logic students do not understand the proposition is this way. They understand merely that ‘no philosophers are women’ is false since there must obviously be women philosophers and, similarly, ‘no women are philosophers’ is false. With this understanding, the proposition is false. Their empirically oriented understanding of the situation to which the proposition pertains is veridical with the way they understand the proposition: ‘Something that contains no utterance of truth, certainly cannot be true’. At the very least, the proposition is not self-evident to the introductory logic student. Ultimately, however I think that the examples point out the same thing as we will see in as important in (2b) sorts of cases. That is, the unexamined role of ‘understanding’.
The dissensus conceived thusly can occur in the following cases: (a) one agent apprehends immediately the self-evident proposition and the other fails to apprehend it immediately and mediately; (b) one agent apprehends immediately the self-evident proposition and the other fails to apprehend immediately, but attempts a mediate route to self-evidence, fails, and argues the failure is evidence that the proposition is not indeed self-evident; and, (c) one agent apprehends the mediate self-evidence and the second agent fails to see that the proposition is self-evident at all - that the proposition is only 'mediately self-evident' is reason for distrusting that it is actually self-evident.

There does not seem to be a way to adjudicate what sort of self-evidence, immediate or mediated, is appropriate for any particular proposition. Though, I think, Audi would simply argue that all self-evident propositions are open to both ways of apprehending. In this way, any immediately self-evident proposition can be understood as mediately self-evident since entailed by their being self-evident is that their truth is contained within the contents of the proposition itself. Thus, understanding is a condition for self-evidence and that condition obtains in either case of self-evidence: immediately or mediately.

I think Audi's answer is incomplete. It is obvious that mediately apprehended intuitions entail some sort of mental process that leads one to intuitive apprehension.\(^\text{66}\) Audi's supposition that the resulting intuitive knowledge is a result of mere "understanding," "reflection," and "thinking" lacks the explanatory power to

\(^{66}\) The same can be said for immediately apprehended self-evident propositions; though, it is not in the same way obvious since if propositions are apprehended directly, there need not be reflective understanding entailed by the apprehension of the proposition.
describe what cognitions are occurring when a proposition is intuitively apprehended.
I present empirical evidence in the next chapters that, to a greater extent, explains these cognitive processes.

**The 'Non-Discursive' Objection**

Intuitions have the character of being non-inferential, immediate, and direct. Thus, the process by which one arrives at self-evidence cannot be evaluated in a reflective way. I cannot turn back on my own or another's intuitive apprehension that a proposition is true in order to analyze for adequacy the process by which one arrives at truth. There are no premises, rules, or appeal to any sorts of criteria by which one comes to have an intuition. There are no relations amongst premises or relations of premises to conclusions that can be evaluated. Thus, intuitions are non-discursive. Hence, many intuitionists are charged with being dogmatic since those who hold intuitions cannot offer reasons for why their intuited of a proposition is correct.

Not all instances of arriving at intuitive knowledge lack other reasons for the correctness of one's intuitive apprehension. Audi construes intuition broadly as encompassing not only the immediately self-evident, but also the mediately self-evident. There seems some room for justifying one's mediate intuition even if it has the character of being non-discursive. If the intuition is immediate and direct, then evaluation is not likely. If the evaluation is of the mediately self-evident proposition, then one can evaluate how it is one came to understand the contents of the proposition. One is still unable to evaluate the realization of the self-evident truth. What is evaluated is the process of one's coming to realize. For example, I might explain how I came to understand the proposition $x$, by virtue of that understanding I
arrive at the self-evidence of the proposition. I can explain to another how I arrived at the understanding of \( x \). However, I am still not able to explain how that understanding gives to me \( x \)'s self-evidence.

Also, if it can be shown that an intuition is not dogmatic or in some other way biased, then we have more reason for believing that it is correct. However, cognitive science's empirical examination of the cognitive processes will show whether the cognition that we attribute non-discursive character to is actually direct and immediate.

**The Dogmatic Objection**

What is to distinguish an 'intuition' resulting from dogmatic belief or personal bias from an authentic intuition? BonJour notes of inauthentic intuitions that "despite seeming clearly and obviously true, they will [almost always] not seem necessary in the relevant sense," even to those having them.\(^67\) Consider BonJour's example: "while a mother's emotional bias may lead her to regard her own child better-behaved than other children, she is extremely unlikely to regard this fact as metaphysically necessary."\(^68\) Presumably, sufficient self-reflection will reveal beliefs held on the grounds of personal bias.

One solution is to establish a set of criteria for having intuitive beliefs that are not biased or dogmatic. However, BonJour objects that any criteria would be established via empirical methods and hence undermine the *a priori* character of

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\(^68\) *Ibid.*
authentic intuitions.\textsuperscript{69} Applying criteria to intuitive apprehensions does not eliminate the possibility of intuitive knowledge outright - just the fully \textit{a priori} intuition the rationalist pursues.\textsuperscript{70}

BonJour points out that we may not always identify biased or dogmatic intuitions. However, we are aware of personal biases of individuals. It seems in these cases we are normally wary of the intuitive knowledge that others offer when it is consistent with their personal biases. We are wary of the Catholic's intuitions about abortion and of Hitler's intuitions about 'the right direction for Germany'. Careful re-examination of intuitions via internal reflection and third party consensus will help eliminate inauthentic intuitions. We may not capture \textit{all} erroneous intuitions in this manner, but given time and suitable reflection most will be weeded out. Moreover, the possibility of authentic \textit{a priori} intuition is still left open.

\textbf{The Meta-justification Problem}

The Meta-justification Problem argues that a "a second-order reason or justification" is needed to make us think that self-evidence is "likely at least to lead to believing the truth." Intuitions are immediate (direct), non-inferential and self-evident; thus they cannot offer other reason(s) for thinking they are true.

Audi distinguishes between first-order intuitions, understanding that a proposition is true (non-inferentially); and, second-order intuitions, understanding that a proposition is self-evident and as such is non-inferential and is true in itself.

\textsuperscript{69} Thus a rationalist view of \textit{a priori} justification plainly cannot appeal in this way to an independent criterion in order to solve the present problem" \textit{(Ibid., 135-6.).}

\textsuperscript{70} This poses another dilemma for this project, The External Criterion Problem, which I take up later.
Intuition conceived thusly offers second-order justification for believing our intuition that a proposition is true, i.e. because it is self-evident.

Audi seems to present meta-justification for intuited beliefs. However, a better account of the processes involved in intuition would offer other second-order reasons for thinking that the intuitive apprehension is correct. Cognitive science can offer an account of processes involved in intuition. This more robust account will serve as a better template for evaluating and offering justification that intuitions are correct. Moreover, a criteria for meta-justification may also help eliminate those intuitions that are the result of dogmatically held beliefs or bias.

The Causal Objection

Alexander Miller's argument that moral realists are "epistemologically bankrupt" points out that moral facts are not causally related to the beliefs we purport to have of them.\(^{71}\) In other words, seeing (the fact) \textit{that} burning a cat is wrong cannot be epistemologically justified.\(^{72}\) The sort of moral property the moral realist

\(^{71}\) Alexander Miller, \textit{An Introduction to Contemporary Metaethics} (Cambridge, UK: Polity Press, 2003), 35-6. Intuition is supposed to give us epistemic access to moral facts, which is supposed to provide justification for our believing them. Intuition is the explanation for how intuited belief manifest. Miller argues that intuition could be defended in two ways:

(A) We are justified in having beliefs about moral facts since intuition has the capacity for making correct moral judgments; and

(B) We are justified in having beliefs about moral facts since intuition is a cognitive faculty similar to sense-perception in some respects, but unlike sense-perception insofar as the state of affairs perceived are not part of the causal order. (Miller, 35)

He argues that both possibilities fail. (A) fails because "correct moral judgments access the moral facts because they are the upshot of exercises of the capacity to form correct moral judgments’ is trivial and completely unexplanatory” (Miller, 35) (B) fails because it does not tell us the relevant aspects of intuition that make it similar to sense-perception, moreover, that those similarities are relevant for our justifying beliefs in the same way that we justify beliefs derived of sense-perception. (Miller, 35-6.) Note that beliefs derived of sense perception, on my account, are not foundational since other beliefs are necessary to justifying them.

describes "is not part of the part of the causal order and is not detectable by the senses." Non-moral facts, on the other hand, have a causal story about how they come to be represented as beliefs. Consider my dog Annabelle. I have a justified belief that she is curled up in front of the fireplace. There is a causal story that coheres with the beliefs I have of Annabelle, how that belief comes to be represented in my mind; and, moreover, those beliefs cohere with (almost all) of the rest of my beliefs: e.g. that I remember getting a dog, naming her "Annabelle," raising her, etc.

There are, however, no theories for perceiving moral facts that cohere well with other beliefs about how I come to hold beliefs that are justified. There is not a causal story for how intuitions are manifested as beliefs. They just seem to 'pop' into conscious thought.

Bonjour points to the same problem: there is no causal relation between my belief that $p$ and the object or situation to which $p$ pertains. If moral facts exist, then, as far as a faculty of intuition is similar to a faculty of perception, we presumably need a causal story of how mind-independent moral facts are causally related to the beliefs one has of them. BonJour, however, points out that we ought to not take the analogy of intuition and sense perception too seriously. It represents, to an extent, the apprehension of self-evident truths. It does not, however,

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If you round a corner and see a group of young hoodlums pour gasoline on a cat and ignite it, you do not need to conclude that what they are doing is wrong; you do not need to figure anything out; you can see that it is wrong.

73 Miller, 35.
74 Cognitive science describes how I perceive, how those perceptions come to be represented in my mind and that I hold beliefs about them. In general, there is a theory about light waves; how they interact with physical objects (like Annabelle); and how they interact with the physiology of my eyes (cornea, rods, cones, nerve fibers, etc.) to become representation in my mind, which I then can attribute beliefs to. Note that these scientific theories about perception and belief formation are part of the coherent structure of justification for my belief that Annabelle is actually in front of the fireplace.
75 BonJour, 156.
straightforwardly represent the metaphysical relation of one's apprehensions and those things that they are apprehending. This relationship is one that the current project butts up against but does not address directly. The nature of the moral universe will have to be left for elsewhere.  

**The External Criterion Problem**

In *In Defense of Pure Reason*, BonJour articulates and attempts to defend a traditional rationalist theory of *a priori* justification. BonJour argues that *a priori* justification is attainable by rational insight, or what I have been calling "intuition." BonJour argues that establishing independent criteria to prevent biased and dogmatic intuition is "inherently futile" since such criteria will be empirically defined. The objection continues:

[N]either the justification of such a criterion nor its application to a particular case could conceivably be a matter of direct observation, both would have to involve reasoning or non-observational judgment and thus would have to appeal to non-discursive, *a priori* insights of precisely the sort that raise the concern about bias and dogmatism in the first place. And, to appeal to that same criterion to resolve these new worries would be both circular (as regards its justification) and viciously regressive (as regards its application).

I have already pointed out that there are ways of evaluating the adequacy of intuition, which serve as a sort of verification, by offering other routes to justifying

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76 Walter Sinnott-Armstrong criticizes Audi’s suggestion that standard sources of justification (i.e. perception, introspection, memory and reflection) do not need to justify their “justificatory credentials” (Audi, *Architecture*, 19). In "Experience and Foundationalism in Audi’s The Architecture of Reason," Sinnott-Armstrong asks Audi to provide reasons why we ought to accept the standard sources of justification: “Is this just a prejudice in favor of the familiar or is there some rational basis for he standards that Audi accepts along with the rest of us?” (187) Like Sinnott-Armstrong, I’m wary of why we ought to think that justification for moral beliefs can be adequately justified by perception in its intuitive sense. Walter Sinnott-Armstrong, “Experience and Foundationalism in Audi’s The Architecture of Reason,” *Philosophy and Phenomenological Research* Vol. LXVII, No. 1 (July 2003), 181-187.

77 BonJour, 136.

78 Ibid.
intuited knowledge - some other route via inference. For instance, we may simply show that there are no reasons for thinking that the intuition is the result of dogmatic or biased beliefs, or some other agent may give us reasons for believing a proposition that they themselves arrived at intuitively, or we may internally reflect on the intuitively apprehended belief to see if it coheres with their other beliefs (some of which may also be intuitively derived). The intuition can be confirmed to some degree. These sorts of justifications do not undermine the \textit{a priori} character of intuition. These observations do not constitute external criteria, but a means by which one can (internally) correct one's intuitions.\textsuperscript{79} By re-examining the self-evident proposition, one can continue to see it as self-evident. Or, see that the propositions coheres well with other beliefs that one has.

There is a further worry that is spurred by The External Criteria Problem. That is, empirical evaluation of intuitions cannot serve to justify them in a way that confirms that they are \textit{a priori} true. Such evidences can confirm or disconfirm, but such confirmation or disconfirmation will have empirical or \textit{a posteriori} character. However, BonJour begs the question against empirical evaluations of \textit{a priori} knowledge, i.e. intuition. The phenomenon he calls rational insight, or intuition, has properties that are not knowable via one's own phenomenological evaluation of intuition, i.e. one's own experience of it does not grasp unconscious thinking that may be operative in intuition. Empirical evidence suggests that the phenomenon that we experience as intuition is neither non-discursive nor non-inferential. Thus, BonJour is

\textsuperscript{79} If one is pressed into admitting that they are indeed external criteria, one should hold that they are second-order criteria for accepting intuitive beliefs.
wrong about his characterization of the intuitive faculty. Evidence from cognitive science will show this.
Chapter 3

Mediocre Intuitionism

It is important to note a range of philosophers who use intuitions in the course of moral decision-making, but do not make any claims to the epistemic priority of intuited beliefs over or above other beliefs. I term these sorts of philosophers Mediocre Intuitionists. One of the most outstanding is John Rawls. In both his early and late writings, Rawls does not take intuition to offer any sort of ‘special’ knowledge.

John Rawls speaks of ‘moral insight’ in “Outline for a Decision Procedure for Ethics.” He writes,

[I]t is required that the judgment be intuitive with respect to ethical principles, that is, that it should not be determined by a conscious application of principles so far as this may be evidenced by introspection. […] An intuitive judgment may be consequent to a thorough inquiry into the facts of the case, and it may follow a series of reflections on the possible effects of different decisions, and even the application of a common sense rule […] . What is required is that the judgment not be determined by a systematic and conscious use of ethical principles.

The sort of judgment Rawls articulates is, roughly, an intuitive one. I take this to be the operation of a 'moral insight' by a normally intelligent persons who use

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80 R.M. Hare, in Moral Thinking, classifies John Rawls as an “intuitionist.” He writes, True, few philosophers are prepared to own to the name ‘intuitionist’; but the majority use arguments which would have no cogency unless intuitionist assumptions were made. Professor Rawls (1971) is a good example. Having […] diverted the name ‘intuitionism’ into a new meaning, in which it means something like ‘pluralism’, and signifies the belief that there are moral principles which are logically independent of one another (a belief which could be held by many besides intuitionists, and which intuitionists who are monists and believe in a single all-sufficient moral principle could deny), Rawls then proceeds, although disclaiming the name, to use appeals to intuition at all the crucial points in his arguments, which he would not do unless he believed that this was a valid method of reasoning. R.M. Hare, Moral Thinking: Its Levels, Methods, and Point (New York: Oxford University Press, 1981), 75.

81 John Rawls “Outline for a Decision Procedure for Ethics,” The Philosophical Review 60, no. 2 (April 1951), 178; 177-197.

82 Rawls, 183.
common sense reasoning of the soft logics of ordinary moral discourse. That is, they
do not require rigorous explanation of intuitions in the process of making moral
decisions. Moral judges use intuitions in making moral judgments because, overall,
they are productive in constructing a satisfactory moral theory (perhaps by the
process of wide reflective equilibrium). Note: Rawls' metaphysical commitments in
regard to intuition differ between his early and late writings. Early Rawls is simply
neutral in regard to the metaphysical and epistemological commitments of an intuitive
capacity of moral agents. Later Rawls is opposed to moral intuitionism (and moral
facts) that would violate or preclude persons from being heteronymous.

Principlism and casuistry, which I articulated above, seem to fit the
description of the Mediocre Intuitionism as well. Neither makes metaphysical claims
to what intuitions entail, however, both theories require the use of intuition.

I set aside Mediocre Intuitionism since the sort of knowledge arrived at is not
intuitive knowledge: intuitions of this sort lack the epistemological underpinnings to

83 Alternatively, we might take Mediocre Intuitionists to defend a proper functioning theory like that
which Alvin Plantinga Defends:

… a belief has warrant for me only if (1) it has been produced in me by cognitive faculty that
are working properly (functioning as they ought to, subject to no cognitive disfunction) in a
cognitive environment that is appropriate for my kinds of cognitive faculties, (2) the segment
of the design plan governing the production of that belief is aimed at the production of true
beliefs, and (3) there is a high statistical probability that a belief produced under those
conditions will be true. From Richard Feldman, Epistemology, (Upper Saddle River, NJ:
Prentice Hall, 2003), 100. Original in Alvin Plantinga, Warrant and Proper Functioning

We may even construe more broadly that Rawls’ reflective equilibrium method is an intuitive
methodology. Brad Hooker writes in “Intuitions and Moral Theorizing” [in Ethical Intuitionism: Re-
equilibrium method can be characterized as an intuitionism. That is, the reflective equilibrium method
hold that “Moral Theories are better to the extent that they accord with moral claims that are attractive
in their own right – i.e. apart from any inferential support they receive from other moral claim.”

9, 1980), 519; 526-7. Rawls, however, does not preclude that moral fact are ingredient in construing
the principles of justice. (519).
substantiate that they are self-evident, non-inferential and immediate. I take it that
the Mediocre Intuitionists are just not concerned with rigorous epistemological
justification of intuitive knowledge, yet they use 'intuition', in a rough sense, in
making moral judgments. One might argue of particular Mediocre Intuitionists, e.g.
principlists, that intuitive knowledge is a necessary component in the justification of,
at least, some of their moral judgments. As such, a more rigorous explanation of
intuition is required of those Mediocre Intuitionists. Should this be the case, some of
the objections to Classical Intuitionism might concern Mediocre Intuitionism. Thus,
some Mediocre Intuitionists might be aided in by the conception of intuition that
comes out of cognitive science.  

Moderate Intuitionists: Robert Audi and Laurence BonJour

Moderate Rationalism is an intuitionist position that emphasizes that intuitive
knowledge is not indefeasible and that a faculty of intuition is fallible. Laurence
BonJour and Robert Audi are Moderate Rationalists. Audi finds Ross's intuitionism
reasonable albeit flawed in some respects. Audi argues for a more plausible Rossian
sort of intuitionism in The Good and the Right. His purpose has two aims, "to
respond to the theoretical concerns of philosophical critics of intuitionism and to
develop an overall intuitionist position that represents a theoretical advance beyond
Ross's view but is at least as useful as his in approaching moral problems of everyday
life."  

85 I think the project of substantiating that a moral rigorous explanation of intuitive knowledge is
needed from each Mediocre intuitionist would be much too large to take on in this project. It will have
to left for elsewhere.
86 Robert Audi, The Good and the Right, ix-x.
The core distinction of Moderate Intuitionism is that one's intuitions about moral propositions or mind-independent moral facts are not necessarily true or even maximally justified by virtue of our intuiting them. In other words, intuiting moral propositions, or mind-independent moral facts, is not sufficient for establishing their indefeasible truth.

I have already elucidated Moderate Rationalists' responses to important objections like Mackie's, which suppose that intuition is a "special faculty." BonJour, for example, points out that the only faculties humans need to recognize via intuition (or self-evidence) are the abilities to understand and to think; likewise, Audi makes similar claims about maintaining the viability of an intuitive faculty.87

**Robert Audi**

Robert Audi in "Intuitionism, Pluralism, and the Foundations of Ethics" distinguishes strong and weak versions of intuitionism. The strong version of intuitionism holds that "the intuitive faculty yields indefeasible knowledge of self-evident moral truths."88 A relatively weaker epistemological conception is, however, more plausible and more commonly held by those who advocate intuitionism. This is, "roughly the thesis that basic moral judgments and basic moral principles are justified by the non-inferential deliverances of a rational, intuitive faculty, a mental capacity that contrasts with sense perception, clairvoyance, and other possible routes to justification."89

87 BonJour, 107-9. Audi argues a similar thesis, but in much less concise statement in *The Good in the Right* (see pgs. 32 and 78).
Audi's weak intuition has four primary characteristics. (1) Intuitions are non-inferential (directness requirement) since one's belief of an intuited proposition is not on the basis of premise(s). (2) An intuition must be a moderately firm cognition (firmness requirement). "A mere inclination to believe is not an intuition; an intuition tends to be a 'conviction' (a term Ross sometimes used for an intuition) and to be relinquished only through such weighty considerations as a felt conflict with a firmly held theory or with another intuition."90 (3) Intuitions are formed merely on the basis of understanding the contents of the intuited proposition (comprehension requirement). And, (4) (the pretheoretical requirement), "[Intuitions] are neither evidentially dependent on theories nor themselves theoretical hypotheses."91 These represent the directness, firmness, comprehension and pretheoretical requirements, respectively; and are descriptive of the cognitive sense of intuition: a psychological state asserting some belief. Audi distinguishes it from the propositional sense that concerns the content of propositions: by virtue of a proposition's content it is self-evident.

In *The Good and the Right*, Audi elucidates Ross's Intuitionism to make more apparent how it is different from other forms of intuitionism and he articulates a Rossian type of intuitionism that emphasizes intuition can be both self-evident and defeasible. He makes the special point to remove Ross from Moore's shadow. Moore's epistemological project to establish that some moral beliefs can be indefeasible and foundational is, as I have shown, problematic.

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91 *Ibid.*. The pretheoreticality requirement constitutes, as Audi points out, a negative dependence not a positive dependence. Theoretical elements can act as defeaters of intuitions, but intuitions cannot be dependent on theories.
In general, Audi takes self-evidence to entail that the truth of a proposition is contained 'in itself'. That is, "a proposition is self-evident provided an adequate understanding of it is sufficient both for being justified in believing it and for knowing it if one believes it on the basis of that understanding." Audi distinguishes between first-order intuitions, understanding that a proposition is true (non-inferentially); and second-order intuitions, understanding that a proposition is self-evident and as such is non-inferential and is true in itself. Thus, justifying intuitions can be twofold. There is a first-order justification that is direct, immediate, and non-inferential: apprehending qua intuition. And, a second-order justification that is inferred: Audi's reply to The Meta-justification Problem. It justifies our first-order intuition. It is on this second-order that justification of the first-order is given by apprehending that the proposition has the properties of being direct, immediate, and non-inferential. Audi argues that the first-order belief is all that is needed to save intuition form the sort of objections that challenge its foundationalism.

I have already shown that Audi differentiates two sorts of self-evidence: immediate self-evidence vs. mediated self-evidence. He also distinguishes, albeit problematically, conclusions of inference from conclusions of reflection. Audi's supposition is that conclusions of reflection are based on reasoning that is "non-linear" and "global" but does not contain premises or constitute 'inferentiality' in the process of arriving at the self-evident. Bart Streumer points out in his review of *The Good and the Right* that Audi's reasoning for the distinction between inferential and non-inferential justification is not at all clear. Streumer writes,

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92 Audi, *The Good and the Right*, 49.
He comes closest to explaining this when he distinguishes what he calls 'conclusions of inference' from 'conclusions of reflection'. He claims that conclusions of inference are "premised on propositions noted as evidence" (p. 45), and that reasoning that results in such conclusions is "premise-based" (p. 198). And he writes that conclusions of reflection "emerge from thinking about [something] as a whole, but not from one or more evidential premises," that drawing such a conclusion is "a kind of wrapping up of the question, akin to concluding a practical matter with a decision," that when one has drawn such a conclusion "one has obtained a view of the whole and thereby broadly characterized it" (pp. 45-6), and that reasoning that leads to such conclusions is "non-linear and in a certain way global" (p. 198).93

The upshot of Streumer's objection is that there is no clear line between what is a premise and what is not. Moreover, why is it that we should not consider "the view of the whole" a premise by which base the self-evidence of a proposition? If the line between what is a premise and what is not a premise is blurry, then so is the line between what is inferentially derived and what is non-inferentially derived. We shall see that evidence from cognitive science will shed some light on the cognitive processes that occur when one reasons or reflects as a means to intuiting some propositions.

Laurence BonJour

Laurence BonJour is a Rationalist. In In Defense of Pure Reason, he attempts "to arrive at an understanding of the nature, rationale, and limits of the a priori variety of epistemic justification."94 BonJour writes,

I propose to count a proposition $P$ as being justified a priori (for a particular person, at a particular time) if and only if that person has a reason for thinking $P$ to be true that does not depend on any positive appeal to experience or other causally mediated, quasi-perceptual

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94 BonJour, 15.
contact with contingent features of the world, but only on pure thought or reason, even if the person's ability to understand $P$ in question derives, in whole or in part from experience.\footnote{Ibid., 11.}

Bonjour's project closely parallels Audi's attempt to establish the viability of a moral intuitionism. \textit{A priori} justification amounts to something like an intuitive process of apprehending that a proposition is true, self-evidently.\footnote{“\textit{A priori} justification occurs when the mind directly or intuitively sees or grasps or apprehends (or perhaps merely seems to itself to see or grasp or apprehend) a necessary fact about the nature or structure of reality” (\textit{Ibid.}, 15-16)} BonJour writes,

\begin{quote}
given this understanding of the ingredients of the proposition, I am able to see or grasp or apprehend in a seemingly direct and unmediated way that the claim in question cannot fail to be true - that the nature of redness and greenness are such as to preclude their being jointly realized. It is this direct insight into the necessity of the claim in question that seems, at least \textit{prima facie}, to justify my accepting it as true.\footnote{\textit{Ibid.}, 101.}
\end{quote}

Apparent intuition (and apparent self-evidence) thus provide the basis for \textit{a priori} epistemic justification that is not infallible.\footnote{\textit{Ibid.}, 113.} It is possible that some intuitions are not genuine or that some intuited propositions are not understood in a way that reveals that they are intuitive or self-evident.

Problematic for Audi and BonJour is the role of experience in intuitive knowledge and \textit{a priori} justification.\footnote{Bonjour make an important point concerning the distinction between \textit{a priori-a posteriori} and \textit{necessary-contingent}. Sometimes that a proposition is known \textit{a priori} is taken as meaning also that it is necessary. And, conversely, that a proposition is known \textit{a posteriori} is taken as meaning also that it is contingent. BonJour points out that the \textit{a priori-a posteriori} is an “epistemological” distinction having to do with the way in which a claim or assertion is epistemically justified. The necessary-contingent distinction is a \textit{metaphysical} distinction having to do with the status of a proposition in relation to the ways the world might have been (having no immediate bearing on knowledge or justification)” (\textit{Ibid.}, 11).} Audi and BonJour must reconcile direct, non-inferential insight with the apparently required component of understanding propositions. Both need to exclude from the intuitive apprehension of propositions that believing those propositions is inferentially based in knowledge from one's
experiences. If, in the process of intuitively apprehending some proposition, one infers the truth of that proposition from other beliefs or knowledge gained from experience, then the knowledge derived is not intuitive knowledge. For example, we cannot know what the color red is without having an experience of 'red'. Thus, for such self-evident propositions like 'Nothing can be both red and green all over and at the same time,' truth is inferred from experience since we could not have a concept of red \textit{a priori} (if not 'truth' directly, then the meaning of the color red has to be inferred).\textsuperscript{100}

Bonjour argues that experiences imprint themselves on the mind. That is, we form beliefs of them. Thus, they can be considered, once they have lost their empirical justification - i.e. our experiencing them, \textit{a priori} in character. We can apprehend their content without the empirical ground that formerly served as their justification. "Experiences" are no longer only knowable by experience qua experience. Divorced of their empirical ground, they are now merely aspects of cognition - \textit{a priori} in character. BonJour follows in the tradition of Kant specifying, "a proposition will count as being justified \textit{a priori} as long as no [positive] appeal to experience is needed for the proposition to be justified \textit{once it is understood}, where it is allowed that experience may have been needed to achieve such an understanding."\textsuperscript{101}

\textsuperscript{100} BonJour is particularly plauged with excluding \textit{a posteriori} knowledge from intuitive \textit{a priori} justification. Propositions entailing that one must have had some particular experience to understand what is contained within the proposition seem to lose their \textit{a priori} character. They are contingent upon the agent having some particular \textit{a posteriori} knowledge or empirically grounded beliefs.

\textsuperscript{101} \textit{Ibid.}, 10.
To some extent, I think BonJour is correct. However, much more can be said about 'understanding' and 'thinking' in regard to human intuitions and memory. It is here that cognitive science becomes very relevant to discussions about the function and operation of intuition.

**Summary of the Problems for the Moderate Intuitionists**

The Moderate Intuitionists attempt to offer conceptions of intuition that are not susceptible to the critiques of Classic Intuitionism, especially those of Moorian Intuitionism. However, Audi and BonJour have yet to offer a satisfactory account of what goes on when one 'understands' the self-evidence of a proposition. Related is Audi's attempt to broaden the scope of 'non-inferentiality' in order to substantiate the plausibility of a mediated self-evidence.\(^{102}\) He is unclear how we ought to distinguish what is inferential from what is non-inferential.\(^{103}\)

Empirical examination of the underlying cognitive processes of an intuitive faculty have the potential to illuminate whether intuitions are in fact 'non-discursive' or if we just experience them as being so. Relevant to the 'non-discursive' problem will be whether intuitive knowledge is indeed immediate and non-inferential.

Also, I argue in the following that an empirically informed conception of intuition does not fail in the light of the External Criteria Problem, which argues that empirical justification of intuited beliefs undermines the *a priori* character of

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\(^{102}\) Likewise, BonJour has broadened the concept of *a priori* knowledge.

\(^{103}\) For a relatively short but interesting discussion of these problems in Audi’s work, see Walter Sinnott-Armstrong, “Experience and Foundationalism in Audi’s *The Architecture of Reason,*” *Philosophy and Phenomenological Research* LXVII (1) (July 2003).
intuition, since the objection presupposes the *a priori* character of intuitions. Evidence will show intuition should be alternatively conceived.\textsuperscript{104}

\textsuperscript{104} Problematic for moral realism in general is the Causal Objection. An account of how mind-independent moral facts relate to one’s cognitions of them is needed to account for the relation between them. But, this answer will have to be left for elsewhere.
Chapter 4

Cognitive Science's Study of Intuition

The scientific study of human cognition can shed light on processes of the human mind. The relationship between studies in cognitive science and the philosophical picture of intuition is neither straightforward nor obvious. Cognitive science is still studying how the mind works, including drawing its conclusions about intuition. This should not, however, deter us from our attempts to draw together philosophy and cognitive science. We can still say something substantive.

Philosophers do not use 'intuition' consistently. Thus, it is not surprising to find difficulty in discerning a consistency between what philosophers call intuition and what cognitive scientists call 'intuition'. This is problematic not only because of the ambiguous use of 'intuition' in philosophy, but also because cognitive sciences uses 'intuition' to refer to a cognitive capacity that it has yet to define fully. Philosophers and cognitive scientists are both pointing at something similar; both ostensibly define what they are attempting to discern. The following are a few samples of cognitive science's characterization of 'intuition':

[A] preliminary perception of coherence (pattern, meaning, structure) that is at first not consciously represented, but which nevertheless, guides thought and inquiry toward a hunch or hypothesis about the nature of coherence in question.\(^{105}\)

[T]he phenomenology of insight-problem solution was characterized by a sudden, unforeseen flash of illumination.\(^{106}\)


Perception of possibilities, meaning and relationships by way of insight … [and] the unconscious. Intuitions may come to the surface of consciousness suddenly, as a 'hunch', the sudden perception of a pattern in seemingly unrelated events, or as creative discovery.\(^\text{107}\)

If participants' metacognitions showed a sudden solution, then we should call those problems insight problems, and if they do not then we should not.\(^\text{108}\)

These feelings are best thought of as affect-laden intuitions, as they appear suddenly and effortlessly in consciousness, with an affective valence (good or bad), but without any feeling of having gone through any steps of searching, weighing evidence or inferring a conclusion.\(^\text{109}\)

A later and more focused examination of moral intuition is articulated by Jonathan Haidt in "The Emotional Dog and Its Rational Tail: A Social Intuitionist Approach to Moral Judgment."\(^\text{110}\)

For Haidt, moral intuition is

the sudden appearance in consciousness of a moral judgment, including an affective valence (good-bad, like-dislike), without any conscious awareness of having gone through steps of searching, weighing evidence, or inferring a conclusion.\(^\text{111}\)

It seems that cognitive science and philosophy start at the same phenomenological description of having intuitions: what Audi calls intuition in its 'cognitive sense' as opposed to the 'propositional sense'. The former pertains to occurrent or dispositional states of mind and the latter to the content of the propositions. Even philosophers like Moore and BonJour who emphasize the propositional sense of intuition begin their examination by recognizing intuition via

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its cognitive or phenomenological properties. I submit that cognitive science has
done the same.

For cognitive science, intuition serves as one side to a dichotomy concerning
how judgments occur: in general, it serves to denote fast, unconscious, and
unintentional reasoning processes. The contrasted alternative is a stepwise, conscious
reasoning process. Haidt contrasts direct and stepwise systems of judgment in the
table below (Table 1). 112

Haidt's overall project is to forward what he calls a Social Intuitionist Model
of Moral Reasoning. The social intuitionist model emphasizes that moral judgments
are the result of affect-laden intuitions, contra models that hold moral judgments are
largely the upshot of internal reflection and explicit, conscious reasoning. Haidt's
findings concern how moral judgments are made, not normative claims as to how
moral judgments should be made. 113 Haidt argues that intuitions are affected by
social and cultural influences.

Cognitive science, however, does not seem to acknowledge the epistemic
components of intuitive knowledge. We can, at least, acknowledge that cognitive
science is empirically testing the same sort of intuitive capacities that are the concern
of Moore, Ross, Prichard, BonJour, and Audi; even if they are not explicitly
examining the epistemic character of intuitive knowledge. Inferences from findings

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112 Jonathan Haidt and Craig Joseph, “Intuitive ethics: how innately prepared intuitions generate
cultural variable virtues,” Daedalus 133 (4) (Fall 2004), 56.
113 Haidt, with Craig Joseph, argues that “human beings come with an intuitive ethics, an innate
preparedness to feel flashes of approval or disapproval toward certain patterns of events involving
other human beings […] These intuitions under-gird the moral systems that cultures develop, including
their understanding of virtues and character. By recognizing that cultures build incommensurable
moralties on top of a foundation of shared intuitions, we can develop new approaches to moral
education and to the moral conflicts that divide our diverse society” (Ibid.)

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Table 1: General Features of Intuitive and Reasoning Systems

<table>
<thead>
<tr>
<th>The intuitive system</th>
<th>The reasoning system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast and effortless</td>
<td>Slow and effortful</td>
</tr>
<tr>
<td>Process is unintentional and runs automatically</td>
<td>Process is intentional and controllable</td>
</tr>
<tr>
<td>Process is inaccessible; only results enter awareness</td>
<td>Process is consciously accessible and viewable</td>
</tr>
<tr>
<td>Does not demand attentional resources</td>
<td>Demands attentional resources, which are limited</td>
</tr>
<tr>
<td>Parallel distributed processing</td>
<td>Serial processing</td>
</tr>
<tr>
<td>Pattern matching: thought is metaphorical, holistic</td>
<td>Symbol manipulation: thought is truth preserving; analytical</td>
</tr>
<tr>
<td>Common to all mammals</td>
<td>Unique to humans over age 2 and perhaps some language-trained apes</td>
</tr>
<tr>
<td>Context dependent</td>
<td>Context independent</td>
</tr>
<tr>
<td>Platform dependent (depends on the brain and body that houses it)</td>
<td>Platform independent (the process can be transported to any rule following organism or machine)</td>
</tr>
</tbody>
</table>


in cognitive science to their bearing on the characteristics of intuitive knowledge will be drawn here. The strength of those inferences is debatable.

It worth noting that Haidt's conception of intuition is closer to the philosophical conceptions of intuition that I have elucidated above than the other accounts. That Haidt's notion of intuition is more recently articulated and should be taken seriously since his findings build upon previous empirical research and findings.

My aim in the following section is to lay out relevant empirical studies of intuitive capacities and relate them to the arguments concerning intuition in philosophy: especially to investigate how they weigh in on objections to intuition. The upshot of these observations will show a parallel between the epistemological conception of intuition of the Moderate Intuitionists and the empirical studies of intuitive capacities. However, one point of will come under heavy contention, i.e., whether intuition are truly non-inferential. The empirical evidence shows that intuitions are the upshot of non-conscious or unconscious inferences.
Experimental Evidence Concerning Intuition

Surprisingly, epistemologically oriented philosophers have taken little note of the work that has been done in cognitive science. It seems obvious that intuition is a normal aspect of human cognition: intuitions are a common aspect of human experience and most people claim that they have intuitions.

Empirical study of cognitions illuminates how conscious and unconscious processes manifest themselves as an intuition. Surprisingly, a relatively consistent picture of intuition can be derived from various empirical studies. Cognitive science will be able to tell us something about the *immediacy* of intuition, whether intuition is indeed *non-inferential*, and whether intuition can apprehend the *self-evidence* of propositions.

Cognitive science can also weigh in on the objections that Moderate Intuitionism attempts to deal with. In particular, intuitions do seem fallible and defeasible. A vivid picture of how intuition works could offer a solution to The Meta-justification Problem. Also, if intuitions are painted as stepwise processes and subject to examination, then we can determine criteria that help produce reliable intuitions. However, if we are to accept criteria for intuitions, then we must first overcome The External Criteria Problem - we must show that empirically defined criteria for the proper functioning of an intuitive faculty do not undermine self-evident propositions' *a priori* assertability.

Are Intuitions Defeasible and/or Fallible?

Defeasible beliefs are those that can be overridden or undermined by reasons: either by reasons which force us to doubt the way by which the belief was formed or
by reasons which are a 'better fit', are more consistent, or have better coherence with other relevant beliefs. Fallible beliefs are a result of belief-forming processes that can make incorrect beliefs.\textsuperscript{114}

In "Intuition in Insight and Non-Insight Problem Solving," Janet Metcalfe and David Wiebe tested intuition's accuracy.\textsuperscript{115} They found that subjective feelings of knowing predicted performance on algebra problems (noninsight problems) but not on insight problems.\textsuperscript{116} In addition, they find that subjects' expectations of performance greatly overestimate their actual performance, exceedingly so on insight problems.\textsuperscript{117}

Metcalfe and Wiebe's study offers empirical evidence that intuited knowledge is fallible. It supports the same sort of fallibility that Audi and BonJour argue for in connection with Moderate Intuitionism.

These findings weigh in on the 'Non-discursive' and the Dogmatic Objections. If intuitions are indeed the product of unconscious inferences, then they may have a stepwise functioning that could be evaluated for adequacy. Emotional or dogmatic biases could be identified by these evaluations.

**Immediacy and Other Issues Relating to Intuitive Knowledge**

Bowers et al. disagree with Janet Metcalfe over the temporal immediacy (the phenomenological sense of immediacy) of intuitions. Metcalfe argues that experimental data suggests intuitions are gestalt in that they occur suddenly and

\textsuperscript{114} I use ‘incorrect' in an attempt to remain neutral in regard to what make a ‘true’ belief.
\textsuperscript{115} Metcalfe and Wiebe, “Intuition in insight and noninsight problem solving,” 238 – 246.
\textsuperscript{116} Criteria for insight problems, as Metcalfe and Wiebe note, were “note well defined” (240). Most were labeled as such in previous literature.
\textsuperscript{117} “Normative predictions provided a better estimate of individual performance than did subjects’ own predictions” (Metcalfe and Wiebe, 238).
without steps or increment. Kenneth S. Bowers, Glenn Regehr, and Claude Balthazard examine intuition in the context of discovery: intuition as informed judgment. They argue that data suggest intuition is a response to unconscious inferences in mnemonic and semantic neural networks that only manifest consciously as gestalt-like belief formations. I elucidate Metcalfe's views and what Bowers et al. argue in the way of intuition. I suggest that Bowers et al. do not characterize Metcalfe's position accurately and Metcalfe and Bowers et al. have similar conceptions of intuition.

Janet Metcalfe

Metcalfe has published a number of studies on intuition, or insight (as it is sometimes called). She has collected her more recent experimental data regarding intuition; presenting it in "Insight and Metacognition." There she argues, "many common physical and biological processes have the quality of spontaneous change - the construct itself is scientifically reputable, and the validity of the construct of spontaneous psychological processes in problem solving cannot be ruled out on a

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118 Connectionism is a cognitive science approach to explain the functioning of the mind in term of neural networks. Mnemonic and semantic neural networks are connectionist systems. These systems have seven basic components:

- (1) a set of processing units (nodes),
- (2) a state of activation defined over the units,
- (3) an output function for each unit that maps it activation state onto an output,
- (4) a pattern of connectivity (with various “weights”) among units,
- (5) an activation rule for combining the inputs to a unit with its present state to produce a new activation level,
- (6) a learning rule that uses experience to modify the pattern of connectivity among the units,
- (7) an environment in which the system functions. (Casebeer, 83)


120 Metcalfe, "Insight and Metacognition," 181-197.
priori grounds."\textsuperscript{121} She argues that this as an empirical question that can be uncovered by scientific investigations. Metcalfe's investigations suggest that intuition, as a feeling of rightness or belief that one is correct, occurs as a "near-spontaneous change in representations in insight problem solving that contrasts to the incremental changes that underlie routine problem solving."\textsuperscript{122} To show that insights are the upshot of a gestalt process, Metcalfe reviews three areas of cognitive data: 'feeling-of-knowing' data about person's predictions on problem solving and memory retrieval tasks; amnesic patients with severe memory dysfunction - presumably if there is severe damage to areas of the brain responsible for memory, persons with such damage would not have normal insight capacities, but only if insight is the upshot of a memory retrieval process; and, Metcalfe argues that if insight is the product of memory retrieval only, then we have to account for "Menon's Paradox."\textsuperscript{123}

Metcalfe attempts to show that insights, or intuitions, occur in rapid phase changes. She argues that in the same way that there is not a stable structure of $\text{H}_2\text{O}$ among solid, liquid, or gas phases, there are not 'stable' steps that are inclusive of the intuitive process. That is, there is a parallel between the rapid phase shifts that occur in other natural processes and those that manifest as intuitions. Both seem to have intermediary steps that are not incremental: there are no coherent intermediary steps that lead to a conclusion.

\textsuperscript{121} \textit{Ibid.}, 181. Metcalfe offers the phase changes of water molecules as evidence for things in nature having the capacity to undergo rapid, gestalt-like changes.

\textsuperscript{122} \textit{Ibid.}, 188.

\textsuperscript{123} Metcalfe argues that “memory-only theorists,” those that think that problem solving is accomplished by remembering the solution, cannot account for the regress problem – how the problem was solved the first time. Such a view precludes that novel solutions can occur. However, Metcalfe points out that “it seems reasonable to postulate that there exists some process by which events, structures or solutions that are new emerge” (\textit{Ibid.}, 194-5).
To evidence that these sorts of gestalt changes occur in cognition, we can look to examples like the Necker Cube or the duck-rabbit pictures. Our understanding of the contents of these sorts of images changes rapidly, almost immediately when we understand that the lines that make up the images can represent more than one form. However, if one who sees the duck-rabbit has only ever seen a duck and never a rabbit, or vice versa, then they will not 'see' the other image. Thus, it seems that some sort of memory is involved in gestalt perceptual changes, even though they lack intermediary forms of apprehension.

Metcalfe cites previous data collected from her insight experiments. These experiments examined the role of memory in insight problem solving. The data collected, Metcalfe argues, supports an argument that if insight involved memory retrieval that memory retrieval problems and insight tasks would have roughly the same pattern of results.

Participants were given problems that they would not know the immediate answers to, insight problems; were also given algebra; and noninsight problems. Noninsight problems were multistep problems that had been designated in previous literature. Subjects were asked to indicate their feelings-of-warmth, or how close they felt they were to the actual solution to the problem, at 5 to 10-second intervals. Ratings were marked on a graduated scale labeled 'cold' to 'hot.' Metcalfe assumes that if the participant indicated having greater feelings of warmth as they progress

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124 Metcalfe and Wiebe (1987) and Metcalfe (1986)
125 An example non-insight problem: “Given containers of 163, 14, 25, and 11 ounces, and a source of unlimited water, obtain exactly 77 ounces of water” (Luchins, 1942). An example insight problem: “A prisoner was attempting to escape from a tower. He found in his cell a rope which was half long enough to permit him to reach the ground safely. He divided the rope in half and tied the two parts together and escaped. How could he have done this?” (Restle & Davis, 1962).
towards solution, then it would show that the participant was proceeding, stepwise
towards a solution - a noninsight solution. Insight solutions, however, would not
have gradated reports of warmth ratings. In a second experiment, participants were
asked to make predictions about their ability to answer on two sorts of problems, of
which they would not know the answer to immediately: memory recall problems and
solution problems.

Metcalfè (and Wiebe) found that,

(1) subjective feelings of knowing predicted performance on algebra problems but not on
insight problems;
(2) subjects' expectations of performance greatly exceeded their actual performance,
especially on insight problems;
(3) normative predictions provided a better estimate of individual performance than did
subjects' own predictions, especially on the insight problems; and
(4) the patterns-of-warmth ratings, which reflect subjects' feeling of approaching solution,
 differed for insight and noninsight problems.\textsuperscript{126}

Metcalfè explains two possibilities for the evidence she collected. There is a
process underlying insight that (1) "may undergo a sudden shift - reflected in the
metacognitive judgments," or (2) the process occurs in steps and is incremental,
however, it is not consciously able to be inspected.\textsuperscript{127} The distinction among these
processes at first seems moot in regard to whether insights, or intuitions, are
inferential. But, perhaps not, if we remember the Moderate Intuitionist's attempts to
broaden the notion of 'non-inferentiality'. If the underlying process turns out to be
gestalt-like change - metacognitive judgment without coherent intermediary steps -
then the Moderate Intuitionist has more ground to support the claim that intuitions are

\textsuperscript{126} Metcalfè and Wiebe, 238.
\textsuperscript{127} Metcalfè, "Insight and Metacognition," 191.
non-inferential even on 'global consideration', e.g. Audi's soft self-evidence. However, if intuition turns out to be the upshot of unconscious stepwise judgment procedures, then a stronger argument that unconscious steps to a judgment do not constitute inferential belief formation is needed. Unfortunately, in 1998, Metcalfe cannot tell us which is correct. Bowers et al., however, contest Metcalfe's findings.\textsuperscript{128} Their criticisms are, to an extent, misplaced.

Bowers et al. argue that Metcalfe's "gestalt view implies that the experience of sudden insight reflects a genuine discontinuity in the underlying perceptual - cognitive processing of information - a more or less spontaneous restructuring of the problem that immediately yields a solution."\textsuperscript{129} However, neither of the reasons that Metcalfe offers for her findings entail "discontinuity." Her analogy to similar gestalt events in nature is relevant here. There is no discontinuity in water when it changes among liquid, gas, and solid states. At all times, we can track its structural form and see that the same molecules arrange themselves into different structures. Metcalfe even begins "Insight and Metacognition" by divorcing herself from these, as she puts it, "messenger of God views."\textsuperscript{130} Bowers et al., however, offer more substantive criticisms of Metcalfe's experimental assumptions.

\textsuperscript{128} We should note, however, Bowers et al. assume intuition as part of a judgment process. "Most recent work concerned with intuition has emphasized the errors of intuitive judgment as informed judgment in the context of discovery. The present research instead views intuition as informed judgment in the context of discovery." Kenneth S. Bowers, et. al., "Intuition in the Context of Discovery," \textit{Cognitive Psychology} 22, 72-110 (1990), 72.

\textsuperscript{129} Ibid., 95.

\textsuperscript{130} Metcalfe, 1998, 182. She cites Weisberg's \textit{Creativity, Genius, and Other Myths}: The messenger of God view assumes that creative products come about through leaps. The creative person suddenly begins to produce something complete without knowing where it is coming from. This view has come down to us least from the Greeks, who believed that the gods or the Muses breathed creative ideas into the artist [...] . Studies of famous scientists and artists often emphasize their spontaneous “aha!” aspect of creativity[...] . If creative
Bowers et al. challenge Metcalfe's assumption that if solution warmth ratings are gradated, then the solution procedure is stepwise. They point out that, "it may well be that warmth ratings do not always reflect the underlying cognitive convergence toward a solution, much as memories can surface without an anticipatory or accompanying experience of remembering (Bowers & Hilgard, 1988; Ecich, 1984; Graf & Schacter, 1987; Schacter, 1987)." Thus, warmth ratings are poor for distinguishing insight from noninsight metacognitions.

**Bowers et al.**

Bowers et al. set out to answer, "How does a person proceed from the perception of three clue-words to the solution of a coherent triad?" They argue that the evidence they collected suggests that the apprehension of clue-words automatically activates other related words in the semantic and mnemonic neural networks. Thus the phenomenon we experience as intuition is 'presupposed' by the underlining cognitive processing of neural networks. This view offers a more concrete view of what Audi and BonJour merely call 'thinking' and 'understanding'.

Semantic and mnemonic networks overlap to some degree. The former is of conceptually related semantic terms; the latter is a set of information that has been coded in a particular way for easy recall. One may create a mnemonic by associating conceptual ideas for a usual route they might take. One might make a mnemonic achievements do indeed come about through great leaps of insight, brought about by extraordinary thought processes, in individuals who possess some unanalyzable quality called genius, then little more can be said. Creative thinking must remain mysterious and unknowable. … The creative capacity that the ancient Greeks assigned to the mythical gods has in our era been assigned to the unconscious and other exotic processes. (Weisberg, 1986, pp. 1-3)

131 Bowers et al., 96.
132 Ibid.
using the route they take to class, associating buildings and landmarks with important concepts/words/ideas they need for an exam. For example, one might relate Socrates to the 'Stadium', Plato to 'Parking', and Aristotle to 'Annex' to remember the historical order to the Greek philosophers since as one walks to class one first passes the Stadium, then Parking, and finally arrives at the Annex. Alternatively, one might use the word 'spa' as a mnemonic device: Socrates, Plato and then Aristotle. We have much less influence over the way that semantic networks are coded. Consider the example diagram of semantic memory relations that Collins and Quillian offer (Figure 1).

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**Figure 1: Collins and Quillian Semantic Network**

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133 Figure is from A.M. Collins and M.R. Quillian, “Retrival Time from Semantic Memory,” *Journal of Verbal Learning and Verbal Behavior* 8 (2) (1969), 240-7.
When clue-words are related to the same word in the semantic network and that word is multiply activated by its associated clue-words, then "this common associate is more likely to be cognitively represented than competing associates which are not multiply activated (Collins & Loftus, 1975)."\textsuperscript{134} Intuitions, conceived thusly, are responses to patterns of coherence that are already part of the mind's structure. Interestingly, mnemonic networks are not 'hard wired' into the brain. Their contents are dependent upon individuals' experiences and learning. That is, if one does not know what a dog is, then 'dog' will not be part of a semantic network.

Bowers et al. found "that people could respond discriminately to coherence they could not identify, and [...] that this tacit perception of coherence guided people gradually to an explicit representation of it in the form of a hunch or hypothesis."\textsuperscript{135} Intuition occurs in two stages: the \textit{guiding stage} and the \textit{integrative stage}. First, "By a process of spreading activation (Collins & Loftus, 1975), clues that reflect (and ultimately reveal) coherence automatically activate relevant mnemonic networks - thereby producing a tacit or implicit perception of coherence. [...] the clues to coherence activate relevant mnemonic networks in a graded and cumulative fashion."\textsuperscript{136} There is a transition into the second, \textit{integrative stage} that is experienced as a "sudden, gestalt-like perception or insight that seems virtually self-validating."\textsuperscript{137} Once sufficient neural activation has been reached, the threshold between conscious and unconscious awareness is crossed and the agent integrates the formerly unconscious apprehensions of coherence into conscious representations. The second

\textsuperscript{134} Bowers et al., 80.  
\textsuperscript{135} Ibid., 72.  
\textsuperscript{136} Ibid., 74.  
\textsuperscript{137} Ibid.
stage justifies the guiding stage by contextualizing the unconscious apprehension of coherence.

There are related set of studies that support the findings of Bowers et al. on unconscious affects on belief formation by John A. Bargh and Tanya L. Chartrand. In "The Unbearable Automaticity of Being," they show that the function of unconscious cognitive processes supplements much of our conscious experience of thought.\textsuperscript{138} Hence, their findings suggest that our awareness of our thoughts does not tell us the whole story of how our thoughts come to be. Our conscious thoughts can have unconscious origins. If unconscious processing is occurring before agents are consciously aware of intuitions or the phenomena of experiencing an intuitive faculty, then phenomenological immediacy, epistemological immediacy, and that intuitive knowledge is arrived at non-inferentially and still be self-evident needs to be re-examined.

We now have a way of formulating 'thinking' and 'understanding' in regard to apprehending self-evident proposition. We have a theoretical structure that explains why intuitions seem to occur immediately and have the feeling of being direct though they are the upshot of stored 'memory' in neural networks. However, it is questionable whether we should consider the operation of semantic and mnemonic neural networks to undermine the non-inferential character of intuited knowledge. The question still spins on what counts as a premise. I'll leave this question for elsewhere.

\textsuperscript{138} John A. Bargh and Tanya L. Chartrand, "The Unbearable Automaticity of Being," \textit{American Psychologist} 54, no. 7 (July 1999), 462 – 479.
Chapter 5

Unification of the Moderate Intuitionist Position and Cognitive Science

Cognitive science presents philosophers with a more complete account of 'understanding' in relation to the faculty of intuition. This Connectionist conception of 'understanding' holds that entailed in the intuitive process is the operation of mnemonic and semantic neural networks, whose operation is almost entirely unavailable to conscious introspection. Bowers et al. offer a Connectionist explanation of the processes that grasp a proposition's meaning, pointing out that apprehensions, conscious and unconscious, correlate with activation energies of mnemonic and semantic neural networks. Data from cognitive science suggest that this process is largely unconscious. Intuitions are manifestations of memories/beliefs stored and sorted in mnemonic and semantic neural networks.\(^\text{139}\) If 'understanding' propositions is the upshot of the operation of these neural networks, then the intuitive knowledge that is the result of an intuitive faculty needs to be re-examined. 'Understanding' takes plays a different justificatory role when it is the upshot of discernable cognitive processing. In the following, I point out the implications the results from cognitive science have for the characteristics of intuitive knowledge.

Self-evidence

Given that mnemonic and semantic neural networks seem to be component in understanding self-evident propositions, what should we make of Audi's conception of self-evidence? Audi, construes "the basic kind of self-evident proposition as

\(^{139}\) Admittedly, it is unclear to me as to how we ought to define the ‘data’ that are contained in neural networks.
(roughly) a truth such that any adequate understanding of it meets two conditions: (1) in virtue of having that understanding, one is justified in believing the proposition (i.e., has justification for believing it, whether one in fact believes it or not); and (2) if one believes the proposition on the basis of that understanding of it, then one knows it.\textsuperscript{140} Ingredient in the conditions of self-evidence is "understanding."\textsuperscript{141} The grounds for 'understanding', however, are, on the Connectionist model, much more complex than Audi would have them be. 'Understanding', thusly conceived, is a distinguishable cognitive process, the contents and operation of which can be mapped. The Connectionist model of semantic and mnemonic neural networks, which serves as this map, leads us to question whether the 'understanding' that is entailed by self-evidence does not preclude 'non-inferentiality' or immediacy.

'Non-inferentiality'

Connectionism seems obviously to report that there are inferences, as connections between nodes, made when one's intuitive faculty is operating. However, that Connectionist systems, semantic and mnemonic neural networks, are part of the process of intuition, does not entail that Connectionism requires inferences - 'connections' in neural networks may not be inferences. Related is Audi's attempt to broaden the scope of 'non-inferentiality' in order to substantiate the plausibility of a mediated self-evidence.\textsuperscript{142} To my mind, the issue of whether mnemonic and

\textsuperscript{140} Audi, "Self-evidence," 206.
\textsuperscript{141} Note that 'understanding' is also entailed by the comprehension requirement for Audi’s weak intuitionism.
\textsuperscript{142} Likewise, BonJour has broadened the concept of a priori knowledge. Audi is unclear how we ought to distinguish what is inferential from what is non-inferential.
semantic neural processing makes intuited beliefs the product of inference turns on what we might consider a premise and what we might consider an inference.

Premises are, generally, those things that serve as a basis for a conclusion. We might say that premises 'lead us to the conclusion'. However, we can usually be forthcoming with the premises we use for a particular conclusion. A rather parochial example might be 'torture inflicts pain on people' and 'inflicting pain on people is wrong' are premises for the conclusion that 'It is wrong to torture people'. We, however, cannot be forthcoming with the unconscious operations of neural networks, yet they still in some sense lead us to a conclusion. But, as Audi argues in *The Structure of Justification*, beliefs may be "episodically inferential."\(^{143}\) For example, "An inferential belief [not equivalent to a belief based on inference] may be based on another belief with such argumental mediation; on the basis of believing that the trees are swaying, I may believe that the wind is blowing, without mentally passing from the former as premise to the latter as conclusion."\(^{144}\) However, I think we might burden Audi with having to say 'without *consciously* passing from the former as a premise to the latter as a conclusion'. Thus, an unconscious premise may be inferentially involved in intuitive apprehension.

An uncontroversial concept of a premise includes the condition that it is a 'proposition' - i.e. something that we can attribute truth-value to. Thusly, the proposition that we experience as the upshot of intuition is the product of inference only if it comes to be represented in consciousness on the grounds of some other

\(^{144}\) Ibid.
proposition entailed in the unconscious processing of mnemonic and semantic neural networks. To use the example above, we might experience the apprehension of 'It is wrong to torture people.' as self-evident and the upshot of an intuitive faculty. However, unconscious processing may entail the propositions 'torture inflicts pain on people' and 'inflicting pain on people is wrong', without which we would not apprehend the truth of 'It is wrong to torture people.' That propositions are contained in the mnemonic and semantic neural networks does not mean that they are inferentially connected in a relevant way to the intuitively formed belief. A more detailed account of the contents and relations of contents of neural processing needs to be made in regard to unconscious belief forming processes. There are, however, new grounds to base questions about the non-inferential characteristic of intuitive knowledge.

**Immediacy**

Intuitions are phenomenologically immediate, but not epistemologically direct - at least, not in the sense that they directly apprehend mind-independent moral facts. Immediacy in the phenomenological sense is related to the issues concerning *mediately* self-evident propositions. Bowers et al. do not seem to rule out that the upshot of intuitive processing is immediate. Once neural networks reach sufficient activation energies, they 'pop' into consciousness, in an immediate sort of way. Immediacy in the epistemological sense that mind-independent moral facts are directly grasped by the intuitive faculty seems to be out of the picture for intuitive
processing since this has more to do with what moral facts are than how we think about them. I defer this issue for other discussions.\textsuperscript{145}

**Conclusion**

I did not accomplish what I set out to do when I began this working on this project: I did not come up with a coherent conception of intuition that would be philosophically rigorous and consistent with what we know of intuition via cognitive science. That end turned out to need a much larger project - one that seems to include a concept or account of moral facts. I do, however, point to the direction in which inquiry to substantiate a naturalized conception of an intuitive faculty should go, by arguing for a Connectionist approach to explaining how it is that we cogitate about moral matters. The Connectionist approach, arguably, can shed light on the way we make moral judgments and it deserves further analysis and study.

Some questions yet remain: (1) Are premises entailed by the functioning of mnemonic and semantic networks when their upshot is belief formation? That is, should we count 'global considerations' as premises? (2) By what means might we evaluate the discursive character of mnemonic and semantic networks? (3) Can we correlate certain sets of experience with particular self-evidences? That is, do certain

\textsuperscript{145} Note: Moderate Intuitionists attempt to circumvent the problems of foundationism for intuitionism. A problem for the Classic Intuitionists (moral realists) is how to maintain foundational justification in the light of the fact that intuitive knowledge is sometimes overridden or that one might merely change their mind about the self-evidence of a proposition. One can argue that intuitionists cannot invoke the sort justification that makes moral facts, or beliefs of moral facts, foundational in a structure of justification if they are inferred from other beliefs. Foundational justification for intuition seems undermined when intuitions are the upshot of the unconscious processing of the human mind. If intuition is to give foundational moral knowledge, moral beliefs of the sort that we can found other moral beliefs on, then it needs to be shown how self-evident moral propositions are epistemologically direct. To my mind, the answer to this question requires a conception of mind-independent moral facts.
experiences predispose agents to apprehending a set of self-evident propositions, while another set of experience will predispose agents to apprehending *different* set of self-evident propositions?

Admittedly, more work needs to be done in this area. However, studies in cognitive science illuminate some aspects of intuition that have been previously unavailable to philosophers.
LIST OF REFERENCES


Vita

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