ORIGINAL PAPER

Utilitarianism and the Evolution of Ecological Ethics

Gary Varner

Abstract R.M. Hare's two-level utilitarianism provides a useful framework for understanding the evolution of codes of professional ethics. From a Harean perspective, the codes reflect both the fact that members of various professions face special kinds of ethically charged situations in the normal course of their work, and the need for people in special roles to acquire various habits of thought and action. This highlights the role of virtue in professional ethics and provides guidance to professional societies when considering modifications to their codes. From a Harean perspective, a professional society should ask both "Are there kinds of situations that members of this profession will normally encounter which members of other professions and/or the general public will not?" and "What habits of thought and action would it be good for individuals encountering such situations to have?"

Keywords Ethics · Utilitarianism · R.M. Hare · Professional ethics · Codes of ethics

Introduction

Like other professional organizations, scientific societies publish codes of ethics and expect their members to adhere to them. Revising its code provides an occasion for reflecting on various questions, including:

(1) Why and how do codes of professional ethics develop and change?
(2) What justifies the inclusion of various provisions in them?
(3) How does professional ethics relate to morality? and

G. Varner (✉)
Department of Philosophy, Texas A&M University, 314 Bolton Hall, 4237 TAMU,
College Station, TX 77843-4237, USA
e-mail: g-varner@tamu.edu

(4)   What is the role of virtue in professional ethics?

This paper introduces the two-level or "Kantian" utilitarianism of philosopher R.M. Hare and details how it provides important insights on each of the foregoing questions, with particular attention to the content of the Ecological Society of America (ESA) code of professional ethics, and what the ESA should focus on in considering revisions to its current code.

Hare's theory is a version of utilitarianism. As philosophers use the term, "utilitarianism" refers to a family of theories with one thing in common: they all hold that, at least ultimately, the right thing to do is whatever will maximize aggregate happiness. They differ widely in how they define the key word, "happiness." Some are hedonists, identifying being happy with having pleasant experiences and avoiding pain, while others define it in terms of some kind of integrated satisfaction of one's preferences, or the preferences one would have if one were adequately informed and sufficiently impartial across phases of one's life. As generally defined, however, all versions of utilitarianism hold that, at least ultimately, the right thing to do is maximize aggregate happiness.

Why the qualification—"ultimately"—is necessary will be explained below, but prior to exploring that qualification it is easy to see why utilitarianism is in such bad odor in many quarters. A utilitarian, it is claimed, cannot hold that such things as slavery and knowingly punishing the innocent are inherently wrong, because under some circumstances, at least, they would maximize aggregate happiness. Philosophers critical of utilitarianism have dreamed up all kinds of "test cases" where it is very clear that breaking the promise you made to a dying friend or hanging an innocent man will maximize aggregate utility. These philosophers appeal to their readers' strongly contrary intuitions to turn them against the theory.

Ecologists are likely to be suspicious of utilitarianism for other reasons. They may associate it with cost-benefit analysis, of which they are suspicious for various reasons. "Cost-benefit analysis" is the view that the economically measurable benefits of a policy are balanced against its economically measurable costs. Cost-benefit analysis has been put forward as a way of operationalizing utilitarianism, but a utilitarian need not believe that all relevant costs and benefits can be measured economically. So however alluring may be the prospect of being able to apply the theory in scientific fashion, a utilitarian need not be sympathetic to cost-benefit analysis.[1]

Another reason ecologists are likely to be suspicious of utilitarianism is that it is a *sentientist* view. That is because it attributes intrinsic value only to conscious mental states, and thus it attributes moral standing only to conscious animals.[2] Ecologists might worry that this will lead it to short-change ecosystems and many of their

---

[1] Unlike cost-*effectiveness* analysis, which uses economic analysis to determine the most efficient means of achieving a pre-determined goal, cost-*benefit* analysis holds that goals should be determined solely by balancing economic benefits and economic costs.

[2] An exception would be Moore [1], who believed that the existence of beauty—even unperceived beauty—adds intrinsic value to the world, and still called himself a utilitarian. That Moore's utilitarianism was non-standard is underscored by the fact that he felt compelled to give it a special name: he called his view "*ideal* utilitarianism."

components that are not conscious. I will address this worry later. First, however, it's necessary to understand Hare's specific version of utilitarianism and how he defends it.

Hare's Two-Level, "Kantian" Utilitarianism

Hare sometimes calls his theory "Kantian" utilitarianism [2, pp. 209 and 216]). That sounds like an oxymoron, because the "categorical imperative" that Immanuel Kant developed seems very much at odds with utilitarianism. For instance, Kant held that, according to the categorical imperative, it is wrong to lie, no matter what the consequences—even if a would-be murderer asks you where his intended victim is hiding [3]. Almost everyone thinks that lying is justified in unusual and extreme circumstances, where the consequences of not lying would be horrendous,[3] but that actually points to what Kant and Hare have in common. Both of them defended their theories without relying on the moral intuitions of their readers, and both believed that where their theories diverged from moral intuitions, it was the intuitions and not the theory that needed work. In contrast, most moral philosophers defend their theories by showing how, in a range of cases, the theory conforms to intuitive moral judgements better than competing theories. Critics of utilitarianism use "test cases" to try to show how the implications of maximizing aggregate utility diverge from deeply held intuitions about things like promise keeping, punishment, and environmental ethics.

This approach to justifying moral principles and theories came to be called "the method of reflective equilibrium" following John Rawls' famous exposition of it in *A Theory of Justice* [4]. In a scathing review of the book [5], and throughout his subsequent published works, Hare argued that this approach is deeply flawed, because intuitive judgments are, at least in the beginning, a product of the moral education individuals receive as children. Unless there are independent reasons for believing that those intuitions are sound, or that some of the intuitions that are subsequently acquired are themselves sound, the method of reflective equilibrium provides no rational support for a principle or theory. Rawls notes that the attempt to systematize intuitions using the method of reflective equilibrium itself alters intuitions; over time, what seemed intuitive comes to seem counter-intuitive, and vice-versa. That these shifts result in a set of intuitions that are more internally consistent does not show that the resulting set is more rationally justified, however, unless one can give some independent reason for thinking that at least some of the intuitions involved were sound to begin with.

What makes Hare's theory Kantian is that he, like Kant, appeals to the logic of moral discourse. On one somewhat over-simplified reading, Kant claimed that all substantive moral truths can be derived from the logical requirement of univers-

---

[3] Kant did not say that one should tell the would-be murderer where his intended victim is, even though one should not lie. So it would be acceptable, in Kant's view, to keep quiet.

alizability, the requirement to judge similar cases similarly.[4] Hare claimed that moral judgments actually have two additional logical properties: they are overriding, and they are, in a special sense, prescriptive. Moral judgements are commonly called prescriptive to contrast them with descriptive statements; moral judgements describe what ought to happen rather than what does happen. But when Hare claims that moral judgements are prescriptive, he meant something much stronger and more controversial: he meant that to sincerely assent to a moral judgment, one must act accordingly and welcome others acting accordingly. Hare claimed that Kant's famous categorical imperative, "Act only on that maxim through which you can at the same time will that it should become a universal law" [6, p. 88], actually expressed these three logical properties of moral judgments, and, contrary to Kant, he claimed that these logical properties of moral judgments force us to think—at least "ultimately"—like utilitarians.

A thorough exposition of Hare's arguments in support of his claims that moral judgments are prescriptive in his special sense and that the three logical properties of moral judgments together force us to think like utilitarians is beyond the scope of this paper. A brief, and very rough sketch of his argument can be given, however, in terms of the familiar Golden Rule. Hare states that the theory he articulates in *Moral Thinking* [8] "provides the logical basis of the Golden Rule" [2, p. 166] and that, properly understood, the Golden Rule expresses the three logical properties of moral judgments [2]. "Do unto others as you would have them do unto you" is an easy way for parents to teach children that if they believe their way of treating others is morally acceptable, then they are logically committed to believing that it would be acceptable if roles were reversed. This is the requirement of universalizability, but according to Hare, the Golden Rule, properly understood, implies the following: to judge that what you are doing in a given situation is morally right requires that you sincerely prefer to live through the experiences of everyone involved in that scenario rather than living through all their experiences under the alternative of not doing what you judge is right. Hare argues that this forces an individual to think like a utilitarian, for if one had to live through everyone's experiences in turn, rather than just one's own, one would choose to maximize the ratio of benefits to harms, since all the benefits and harms would have to be enjoyed or suffered in some order or other.[5] Morality, on this view, becomes a kind of generalized or disinterested

---

[4] Kant's emphasis on "pure" moral philosophy in his *Groundwork of the Metaphysics of Morals* suggests this reading, but even there Kant says that moral philosophy "requires anthropology for its *application* to man" [6, p. 79 italics in original]. As H.J. Paton explains, Kant's view is that the categorical imperative can be derived from the logic of moral discourse alone, while its application to human beings requires empirical knowledge "of human nature (and indeed of many other things)" [7, p. 14]. Hare is more explicit and clear on this point. While it is the logical features of moral discourse that force one to think like a utilitarian, what utilitarianism implies (and what intuitive level rules an archangel would choose for people to use) depends on many empirical questions [8].

[5] One of the main objections to Hare concerns this claim. People often say that in this choice situation, they would instead operate according to Rawls' "maximin" rule, which says, in effect, "maximize the minimum payoff" [4]. Rawls claims that people in "the original position," where they are choosing rules for the society in which they will have to live out their lives (but without knowing who they are going to end up being) would operate according to this rule. Notice, however, that the choice presented in Hare's theory is crucially different. According to Hare, when one makes a moral judgment, one is in effect deciding which series of experiences or which series of complete lives is preferable. Either way of putting

prudence, and just as accounts of prudence stress not discounting the future, morality involves not discounting others' experiences. The parallels between prudence and morality make the Golden Rule a useful tool for helping children learn to see their actions from a moral point of view.

That is how, according to Hare, the logic of moral discourse forces people to think like utilitarians. For several reasons, however, Hare argues that real world human beings need non-utilitarian principles for day-to-day decision making, and this is what puts the "at least ultimately" into Hare's version of utilitarianism. The first reason is that extremely detailed information would be needed to apply the theory correctly, but human beings are usually lacking some or much of the relevant information. An extreme example would be that if the child drowning in the pond was the young Adolf Hitler, then apparently one does the wrong thing by saving him, even though it is not possible to know the long-term consequences of doing so. In much less dramatic ways, real world humans are constantly forced to act in ignorance of many relevant details that only an "archangel" (Hare's term for the perfect utilitarian thinker) could know. Humans also have limited data processing abilities and make mistakes, so even if all of the relevant information could somehow be made available, one would still come to the wrong conclusions in a range of cases. Finally, Hare stresses the extent to which individuals are inclined to "cook the data" in favor of self-interest. Even when the relevant information is both available and clearly indicates a particular course of action, people are prone to mistakenly believe that doing what is in their own best interest is also doing what is best on the whole, that is, that that action will maximize aggregate happiness; and people are prone to make this type of mistake in mundane, commonly encountered situations.

This is why Hare's theory has two levels. The logic of moral discourse forces people to think like utilitarians at what Hare calls the "critical level" of moral thinking, but good utilitarian reasons can be given for training individuals to think most of the time in terms of what he calls "intuitive level" rules. For purposes of moral education, these rules need to be fairly simple, like "Do not lie." At the same time, it is often difficult—if not impossible—to express the rule that one is trying to convey in a specific formulation in words. Given humans' tendency to self-deceit, the rules also need to have a deontological "flavor," that is, they need to be internalized in a way that results in a reluctance to violate them, even when, after careful critical thinking, one might believe that he or she is justified in doing so. For this reason, Hare even finds rights claims—which have been characterized as "trump cards against utilitarian arguments"—useful in formulating some intuitive level principles [8, pp. 147–56; 2, pp. 24–30].

Nevertheless utilitarian thinking *must* be used primarily and explicitly in several kinds of situations, including: (1) when intuitive level rules conflict, and (2) in novel

---

Footnote 5 continued

the question turns the choice into a matter of prudence. When it comes to prudential choices, people clearly do not employ a maximin strategy; they do not choose to arrange their lives so as to maximize the minimum payoff they will receive in any one period of their lives. Rather, they are willing to trade sacrifices, in some periods, for increased payoffs in other periods. It seems, then, that they apply *something like* a utilitarian standard.

cases which intuitive level principles are not designed to handle, and on which they give little or no guidance. In these two kinds of situations, intuitive level thinking gets paralyzed and one is forced to rely on critical thinking, however imperfect one might be at doing it. Critical thinking is also essential in order to (3) select and amend intuitive level rules over time and in light of new information and experiences. Such improvements in intuitive level rules could never occur if all one had to rely on were existing intuitions. There is one more kind of case in which one *should*, according to Hare, rely on critical thinking, even though intuitive level thinking would not be paralyzed in this kind of situation. Specifically, it is (4) when something is ruled out by the intuitive level rules one has internalized but both (a) it seems clear that the violation will maximize aggregate happiness and (b) one can trust one's judgment that this is so.

To illustrate the preceding points consider the following examples. A useful rule of mountain biking is (MBR-1): "Do not use your front brake on unstable road surfaces." The front brake is much more effective at braking than the rear, so it is important to learn how to rely primarily on the front brake in emergency braking conditions on good surfaces. On unstable surfaces, however, it is easy to cause a wheel skid, and it is much harder to recover from a front wheel skid than from a rear wheel skid. MBR-1 is a good rule for mountain bikers to learn, but a better version of it might be (MBR-2): "On unstable road surfaces (like loose dirt, gravel, or snow), do not rely primarily or heavily on your front brake." This version is better insofar as it does not over-generalize the way the first one does: experienced mountain bikers will certainly use their front brakes on some unstable surfaces, they just will rely primarily on their rear brake. Putting the relevant condition at the front suggests something about this rule's place in an organized, comprehensive statement of rules, and perhaps it is helpful to give some examples of the unstable road surfaces in question. Then again, perhaps the rule would be even better stated as (MBR-3): "On unstable road surfaces (like loose dirt, gravel, or snow), and especially when going downhill, do not rely primarily or heavily on your front brake." The "especially" clause is important because wheels skid more easily when going downhill.

Obviously, the rule could be formulated in other ways, and there are good reasons for adding many other qualifications. This illustrates Hare's points that sometimes—indeed often—there is no canonical way of stating the rule in question, but also how, when it comes to education, one generally uses over-simplified versions. When introducing a young child to mountain biking, for instance, one might begin by teaching the over-generalized rule MBR-1, switching to more complicated rules like MBR-2 or MBR-3 as the child becomes a more experienced rider, while acknowledging that no articulated version of the rule would cover all of the kinds of situations that a very experienced mountain biker would have learned to address. Hare claims that the rules of common morality are like this. With small children, one begins with over-generalized rules like "Do not lie," and then, as the child becomes a more experienced moral thinker, more complicated versions might be "Do not lie except in order to prevent needlessly upsetting people," or "Do not lie except in special circumstances, e.g. where lying is necessary to avoid serious harm coming to people, etc., etc. …" The "etc., etc. …" points to the fact that no

articulated version of the rule will in fact capture all and only the exceptions to the first (clearly over-generalized) rule that would be allowed by the common morality of a modern, Western society.[6]

Mountain biking can also be used to illustrate what it means to "internalize" such a rule. Regardless of how the rule has been articulated during training, the mountain biker who avoids a crash by reflexively releasing the front brake in a scary situation on an unstable surface is the one who has properly internalized the rule. The mountain biker who crashes because he reacted to the same situation by squeezing harder on both brakes has not properly internalized the rule, even though he stands up immediately afterwards and says, "I know, I know: 'On unstable road surfaces, don't rely heavily on your front brake'!" According to Hare, intuitive level moral rules are like this. Concerning professional ethics specifically, consider the rules that soldiers learn about conducting combat operations around non-combatants. The rules are spelled out in some particular form or other in manuals, but the soldiers have not learned the rules in the relevant way unless they can do more than recite the versions in their books; the goal is to get them to internalize the rules as ingrained dispositions to behave (and, hopefully, to judge) accordingly.

The soldiers' case also illustrates the way intuitive level rules have "a deontological flavor" that makes people diffident about violating them, even when clear critical thinking would justify them in doing so. As indicated above, a soldier who has properly internalized the rules regarding military conduct in the midst of non-combatants will have acquired strong dispositions to behave and judge accordingly. In special circumstances, however, soldiers finally must break those rules and fire directly on civilians. For instance, in an interview a soldier who served in Iraq described a situation where he faced insurgents using women, children, and the elderly as "human shields" while advancing on his unit's disabled Humvees. He said that in that situation, if they did not break the rules they had learned against directly targeting non-combatants, they would all have been killed or captured. He ordered his men to fire on the unarmed civilians that day, and he believed that he was justified in doing so in those unusual circumstances. At the same time, it is common for soldiers to feel something like guilt or regret about their actions in such situations, and society tends to wonder about any who do not feel a related emotion.

This would be a case where, according to Hare's theory, explicitly utilitarian thinking should be used to justify breaking an intuitive level rule. This kind of case is problematic and has been a main focus of Hare's critics. One type of related objection involves dreaming up cases where Harean critical thinking would clearly endorse a profound injustice, such as punishing the innocent. A famous example involves a sheriff preventing a riot that he knows would result in many deaths by framing and hanging an innocent man, knowing that this miscarriage of justice will never be found out. According to Hare's theory, the proposed action should be ruled out by the intuitive level rules that the sheriff has internalized, and yet, given that

---

[6] Recent work on moral reasoning and neural networks suggests that the rules of common morality are often or usually not fully expressible in language and represent, instead, a "paradigm space" as captured in a trained-up neural network. See work by Clark [9].

the facts are as stipulated, critical thinking would lead the sheriff to hang the man. Hare responds to this kind of objection by emphasizing that in the real world, the stipulated facts would never obtain: how could the sheriff know for sure how the riot would unfold, that framing the man would prevent it, and that his crime would never be found out? At the same time, Hare argues, real world humans have good utilitarian reasons for adopting a blanket rule against punishing the innocent, a rule with non-utilitarian "flavor," and that explains why we have the intuition that it would be wrong to do so, even if doing so would clearly maximize aggregate happiness.

Another kind of related objection questions the descriptive accuracy of Hare's theory. The soldier who ordered his men to fire into the unarmed "human shields" might deny that he used explicitly utilitarian thinking to justify his decision to break the regular rule of combat. He might, for instance, say that he was taught that such rules are to be over-ridden in extraordinary circumstances, and he might add some kind of description of what counts as the right kind of "appropriate circumstances" that Hare could simply treat as another kind of intuitive level rule that soldiers are taught.

Another version of the descriptive accuracy objection focuses on the division of moral thinking into two levels with very different characteristics. One version of this objection claims that intuitive level rules cannot continue to have a non-utilitarian "flavor" once one understands that the intuitive level rules are justified by explicitly utilitarian thinking: that is, once it is understood that this is a "noble lie," it ceases to be effective. In response, Hare simply says,

> I do my own moral thinking in the way described in this book … To say that it is impossible to keep intuitive and critical thinking going in the same thought-process is like saying that in a battle a commander cannot at the same time be thinking of the details of tactics, the overall aim of victory, and the principles … which he has learnt when learning his trade. [8, p. 52]

For what it's worth, since experiencing a conversion to Hare's theory over the last 5 years or so, I myself also think, very explicitly, in terms of intuitive level system (ILS)[7] rules I have internalized or should internalize, on the one hand, and, on the other, in terms of what act utilitarian thinking would require. I do this very explicitly and sincerely. I do not think for a moment that surveys of the general populace would in any direct way reveal that they think, as I do, like Richard Mervyn Hare. There is, however, good evidence that people in general do use, in a broad range of situations, two very different kinds of cognitive systems with features that correspond to those of Harean critical thinking and intuitive level thinking.

In his 2002 Nobel Prize lecture, psychologist Daniel Kahneman described how "intuitive judgment" and "deliberate reasoning" differ in similar ways across diverse domains, including sense perception, probability, and statistics. In each of

---

[7] The acronym "ILS" is appropriate in part because it is used in aviation to stand for "Instrument Landing System," a system for finding the right path when one cannot clearly see it and could easily drift off course or be blown off course.

these domains, two very different kinds of systems operate. The operation of what Kahneman calls "system 1" is fast and automatic, while the application of "system 2" is effortful and slow. Kahneman characterizes system 1 as "emotional" and "associative," system 2 as "neutral" and "rule-governed" [10, p. 698, Fig. 1]. Kahneman details how, across various domains of judgment, system 2 can, with effort, be used to over-ride the automatic outputs of system 1.

Kahneman does not discuss moral judgment specifically, but Joshua Greene and colleagues have used brain imaging techniques to show that when subjects are asked to consider certain kinds of moral dilemmas, brain activity indicates a primarily emotional response when the subjects do what Hare would interpret as following an intuitive level rule, whereas the subjects' response primarily involves reasoning when they reach the utilitarian conclusion that the intuitive level rule should be violated. Subjects were presented with moral dilemmas like the following, in which the utilitarian conclusion would involve what Hare would interpret as over-riding an ILS rule:

> Enemy soldiers have taken over your village. They have orders to kill all remaining civilians. You and some of your townspeople have sought refuge in the cellar of a large house. Outside, you hear the voices of soldiers who have come to search the house for valuables.

> Your baby begins to cry loudly. You cover his mouth to block the sound. If you remove your hand from his mouth, his crying will summon the attention of the soldiers who will kill you, your child, and the others hiding out in the cellar. To save yourself and the others, you must smother your child to death.

> Is it appropriate for you to smother your child in order to save yourself and the other townspeople? [11, p. 390]

Subjects who answered yes exhibited longer reaction times and greater activity in the dorsolateral prefrontal cortex, an area associated with "engagement of abstract reasoning processes and cognitive control" [11, p. 390], than subjects who answered no. Greene and coworkers interpret these results as confirming "the hypothesis that utilitarian moral judgments engage brain areas associated with 'cognitive' processes" [11, p. 392] to over-ride what they characterize as "prepotent social-emotional responses elicited by these dilemmas" [11, p. 390].

On Hare's theory, internalizing an ILS rule involves developing just such prepotent emotional responses, which could be characterized, in Kahneman's terms, as a moral "system 1." The research findings of Greene and colleagues suggest that over-riding the output of this "system 1" involves conscious application of a utilitarian moral "system 2." While this hardly constitutes empirical proof of Hare's two-level utilitarianism, it does address the objection that two types of moral thinking with very different characteristics could not continue to co-exist while the output of one is periodically over-ridden by the other. As detailed in Kahneman's Nobel Prize essay, this happens in many non-moral domains of human judgement, and the work of Greene and coworkers suggests that it happens in moral judgment as well.

A thorough defense of Hare's two-level utilitarianism would require more detailed responses to these objections, but enough has now been said to make clear

why utilitarians "ultimately" hold that the right thing to do is whatever will maximize aggregate happiness. For in the case of Hare's two-level utilitarianism, intuitive level thinking does not include application of the principle of utility, and one might even think in terms of respecting rights. The justification for having and using such non-utilitarian rules (and recognizing non-utilitarian *rights*) at the intuitive level is given through explicitly utilitarian thinking at the critical level, and the specific content of intuitive level rules is also given through explicitly utilitarian thinking. In particular, Hare uses the images of "the archangel" and "the prole" to help us understand why humans need both kinds of thinking. "The archangel" would have super-human knowledge, super-human powers of critical thinking, and no human weaknesses, so the archangel would have no need for intuitive level thinking. "The prole" would be dreadfully ignorant and uninformed, incapable of critical thinking, and would have human weaknesses in an extreme degree. So the prole would be incapable of critical thinking. Normal human beings are neither archangels nor proles: they may act on moral "auto pilot" most of the time, but they are capable of using critical thinking in difficult cases, to justify exceptions in unusual cases, and to determine when an intuitive level rule should be abandoned or amended.

It is worth noting that the discussion shifts back and forth between how humans *in fact* think and how they *ought* to think. For instance, as stated above "real world humans have good utilitarian reasons for adopting a blanket rule against punishing the innocent, a rule with non-utilitarian 'flavor', and that explains why we have the intuition that it would be wrong to do so, no matter what the consequences." To describe Harean critical thinking as "giving good reasons" for something is a *normative* claim, a claim about what one is justified in thinking. To describe Harean critical thinking as "explaining why" we have certain intuitions is a *descriptive* claim, a claim about how we in fact think.

One of the problems for Hare's theory discussed briefly above concerns its plausibility as a description of human moral psychology, but another problem is that Hare himself shifts back and forth between claiming that his theory explains a lot about what humans think and say about morality, and claiming that they are justified in applying his theory. In *Moral Thinking* Hare argues that if he is right about the logic of moral discourse and how humans need to use both the intuitive and the critical levels of moral thinking, then he can explain why other philosophers have proposed various other theories (including Kant's theory, rights views, virtue theory, and relativism). When he makes such claims, Hare appears to be offering his theory as a descriptive one concerned with what people mean when they make moral claims. He also uses his theory normatively, when he makes various claims about what would be right or wrong under various circumstances, when he claims that humans/individuals should adopt or reject certain intuitive level rules, and so on.

Hare was certainly aware of the so-called "is/ought gap." He knew that it is a fallacy to infer ought-claims from is-claims, to reach normative conclusions from purely descriptive premises. Hare's theory is unusual, however, in a way that allows him to respond to the objection that he is guilty of doing this. As discussed above, Hare defends his theory by appealing to the logic of moral discourse rather than

relying on the method of reflective equilibrium. When Hare claims that all moral judgments have three logical features—that they are universalizable, over-riding, and (in his special sense) prescriptive—he claims to be accurately *describing* what it means to treat a judgement as a moral judgment. This is a descriptive claim about human language, but because it is a claim about what moral ought-claims *mean* it is also *normative*: if true, it constrains what can consistently be said when making moral judgements. In this way, Hare moves from a descriptive account of the logic of moral discourse to claims about what one ought to say—indeed, what one *must* say—in order to be rational and consistent in one's moral thinking.

Hare's theory is highly controversial, for the foregoing reasons and others as well. However, no other ethical theory does such a good job of explaining why its own critics' tactics work so well, while shedding significant light on the history of philosophical thought about ethics. Hare's theory also sheds light on various real world controversies. For instance, in the currently booming controversy over the use of torture in "the War on Terror," those who invoke "ticking time bomb" scenarios can be seen as appealing to a need for explicitly utilitarian, critical thinking in unusual cases, while those who insist that the United States should adopt a rule against torture are invoking what would be a perfectly good intuitive level rule that should be followed in almost all "normal" cases. If Hare's theory is correct, you would expect just such a disagreement to arise regarding the use of torture. Apropos of ecological ethics, Hare's theory also provides a clear answer to the question of why codes of professional ethics exist, it sheds light on the question of what types of provisions they should contain, it explains how virtue theory is relevant to professional ethics, and it indicates the sorts of questions professionals should address when revising their codes.

The Evolution and Justification of Codes of Professional Ethics

A set of ILS rules is designed to cover a range of ethically charged situations that are encountered by the target population in the normal course of their affairs, and internalizing the rules properly produces dispositions to judge and act accordingly and makes the individual diffident about violating them, even when clear critical thinking indicates that doing so will maximize aggregate happiness.

Given their function, Hare says that there will be "at least three sub-levels" of ILS rules, "the ones common to all, those common to particular roles, and those personal to individuals" [8, p. 203].[8] These correspond, at least roughly, to what one engineering ethics textbook [13, pp. 13–14] calls "common morality," "professional ethics," and "personal morality."

---

[8] As Hare's language suggests, there will in fact be more. For one thing, laws are a category of ILS rules intermediate between common morality and professional ethics. Like codes of professional ethics, laws are written down or otherwise explicitly codified, whereas the rules of common morality may be strictly uncodifiable (see Varner in manuscript, Chap. 2, "The Nature of ILS Rules"). Laws are more comprehensive in scope than professional ethics, since the latter are binding only on members of a given profession. Commonly morality should also be more broad in scope than laws, for reasons given by Mill [12].

If Hare's theory is correct, then insofar as members of a society face similar ethically charged situations, one would expect agreement to emerge on basic standards which everyone in the society will be expected to live up to. This is what Ed Harris, Michael Pritchard and Michael Rabins call a "common morality." Moreover, given the universal features of the human condition, one would expect there to be many similarities between the common moralities of various cultures at different times and places. The many points of cross-cultural agreement are often missed because of the tendency to focus on controversial cases. A particularly striking example is that every major world religion, either in its sacred texts or in authoritative commentaries thereon, endorses a version of the Golden Rule [13, citing versions collected in 14]. If Hare's theory is correct, and if Hare is correct that his theory "provides the logical basis of the Golden Rule," then one would expect the Golden Rule to be very widely or universally endorsed.

Nevertheless, Hare's theory allows for what looks like a kind of relativism, as illustrated by a famous anthropological case study. At the time of their first contact with Europeans, the common morality of the Innuits permitted infanticide and it was practiced far more often on newborn girls than on newborn boys. Knud Rasmussen, who studied Canadian Innuits just after the turn of the twentieth century, reported that in one village 18 marriages had yielded a total of 96 children, 38 of whom were females killed at birth. He does not say how many of the 96 children were female, but assuming that 50% were, that would mean that 38 out of 48, or 79.2% of the female babies had been killed. Similarly, he reports that one woman from another village told him that of 20 children, she had 15 girls, 10 of whom (66%) were killed as infants [15, p. 226]. Another anthropologist, E. Adamson Hoebel, cites several reasons the Innuits needed to exercise sex selection. First, males did the hunting which provided a large majority of the community's food. Second, the death rate was high among hunters. Third, married couples settled near the husband's family, making it less likely that a girl child would support her parents in old age. And fourth, Innuit women nursed their children for a large number of years, which further increased the amount of effort "wasted" in raising a girl [16, pp. 74–76]. A Harean archangel could cite the same reasons for crafting the ILS rules of pre-modern Innuit society differently than the ILS rules of modern Innuit society. This is, however, a benign form of relativism. Full-blown cultural ethical relativism is the view that what justifies the members of society in believing an ethical rule and acting accordingly is the bare fact that it is accepted in their society. In Hare's theory, by contrast, members of a society are justified in believing and acting according to the rules of their common morality to the extent that those rules approximate the ones that clear critical thinking would lead them to choose, and as the society's circumstances change, reformers can use critical thinking to urge changes in the common morality.

Hare's theory also has a place for what Harris and colleagues call "personal morality." Insofar as individuals within a given society differ in their abilities to reason critically under various circumstances, critical thinking will lead different individuals to train themselves to adhere to different sets of intuitive level rules, including what one might call "meta-rules" for deciding when to engage in critical

thinking and when to stick unquestioningly to one's intuitive level rules [8, pp. 41 and 199].

Of particular interest in the present context is the fact that insofar as those in certain roles face special situations in the normal conduct of their work, one would expect agreement to emerge on basic standards for the conduct of various professionals and others in special roles. These ILS rules, when explicitly formulated, would constitute a code of professional ethics. Hare tends to talk about ILS rules being formulated to cover the kinds of situations that members of the target audience "commonly" encounter, but it would be more accurate to describe them as formulated to cover situations that they "normally" encounter. Soldiers, for instance, do not *commonly* find themselves in combat; indeed, many career soldiers never encounter it. Nevertheless, combat is *normal* for soldiers, in the sense that it is the reason for having them—if there was no need to fight wars, there would be no need for soldiers—so their training is designed to make them internalize rules regarding conduct in battle. This illustrates the propriety of describing ILS rules as designed, not to cover situations that the target population *commonly encounters*, but, rather, situations that the target population *encounters in the normal course of their professional lives*. Another relevant example would be police officers: they do not *commonly* get involved in high speed chases, but conducting them is every bit as much a part of their normal duties as is soldiers' engaging in battle.

Hare's theory provides closely related answers to two of the questions raised above in the Introduction: (1) What *explains* the existence of codes of professional ethics? and (2) What *justifies* the tenets of a code of professional ethics? ILS rules in general are designed to guide human beings, who are incapable of perfect archangelic thinking, in the kinds of situations they normally encounter. A code of professional ethics is a set of ILS rules designed with a specific population in mind. What defines the population is that they normally encounter certain kinds of ethically charged situations that the population at large does not normally encounter. If Hare's theory is correct, what *explains* the existence of codes of professional ethics is the fact that members of different professions normally encounter situations that members of the general public do not. What *justifies* the tenets of a code is the fact (if it is one) that professionals will tend to do a better job of maximizing aggregate happiness when they encounter those kinds of situations if they have internalized those tenets. If the authors of the code have done a good job of critical thinking that will indeed be a fact.

Specifying the Contents of a Code

As anyone who has reviewed various codes of professional ethics will realize, there is much overlap among them. From a Harean perspective, it is obvious why this should be so: a wide range of professionals normally encounter the same kinds of ethically charged situations that members of the laity do not. For instance, a wide range of professionals engage in research and publication, and for this reason many codes of professional ethics discuss things like plagiarism, co-authorship, and so on.

Similarly, codes of closely related professions, e.g. those of doctors and nurses, will share provisions that are not found in unrelated professions.

On the other hand, some professions are such that their members normally encounter ethically charged situations of a unique kind, and this is reflected in the fact that their codes of ethics include rules that are found in few or no other professions' codes. For instance, police officers' codes might contain provisions about high speed chases, and codes of military ethics should contain provisions about targeting non-combatants. Such provisions are found in no other professions' codes, and they reflect the fact that members of these professions will, in the normal course of their work, encounter situations that members of other professions never encounter in the normal course of their work. Including related provisions in their codes of ethics insures that properly socialized members of these professions will have developed strong dispositions to behave in certain ways in these situations.

This emphasis on instilling dispositions comports with the view that a code of professional ethics must somehow be informed by virtue theory. For instance, Nancy Jones' recent paper on "life science ethics" emphasizes virtue theory, assuming that a code should include both "the principles for the practice of science, and the virtues of the scientists themselves" [17]. Minteer and Collins [18, pp. 1808–1809] similarly include "virtue ethics"—described as prescribing that people "internalize and display the traits of good character"—in their list of approaches that highlight various dimensions of "ecological ethics."

Although Minteer and Collins do not flesh out the connection to virtue theory, Jones' "prototype code of ethics for the life sciences" includes a list of six virtues: duty, integrity, accountability, altruism, excellence, and respect [17, pp. 40–41]. In some cases, it is hard to understand how Jones' descriptions of these virtues connect up with traditional virtue theory, where the virtues are conceived of as character traits that are essential to leading a good human life or at least contribute to leading a morally responsible life. It is easy to see how altruism could be a traditional virtue, but accountability is a stretch: the accountability of scientists is a function of the system rather than a character trait of individual scientists.

The Harean approach incorporates virtue theory directly into the way ILS rules are "internalized." To properly internalize an ILS rule is to develop a disposition to behave accordingly and to judge accordingly. This is why a moral agent feels compunction after breaking an ILS rule, even if she has been led to do so by clear critical thinking. Internalizing an ILS rule requires more than being able to recite it, it requires developing a disposition to act and judge accordingly, and that disposition remains in place when one acts "out of character." A good scientist is not just able to recite the provisions of his profession's code; a good scientist is one who has internalized these provisions in a way that gives him certain traits of character. If the provisions are well crafted, then developing these character traits will contribute to the leading of a morally responsible scientist's life. This is how, on the Harean view, to internalize the provisions of a code of professional ethics is to acquire certain virtues.

The Code of Ethics of the ESA

The current Code of Ethics of the ESA [19] discusses authorship standards, proprietary data, and simultaneous submission to multiple journals (principles 1–5 under "Publication"), and it prohibits plagiarism and fabrication of data (principles 4 and 5 under "General"). As noted in the preceding section, such provisions are appropriate in any profession whose members actively engage in research and publication. Ecologists also contract out their services and employ staff, and the ESA code also includes provisions found in many business and professional codes, concerning discrimination, harassment, and confidentiality (principles 7 and 8 under "General," and 3 under "Certified Ecologists").

It makes sense that the ESA code includes such provisions, but from the Harean perspective, it also makes sense to ask whether ecologists normally encounter ethically charged situations that members of other professions and the general public rarely if ever encounter. The preamble of the ESA Code does say that "this Code is intended to further ecological understanding," but aside from stating the obvious (that what ecologists are concerned with understanding is ecology), is there anything that distinguishes ecology as a profession? Is there nothing unique or special about the kinds of situations that members of this profession normally encounter that calls for any principles that would not be found in the codes of other professions whose members sell their services and publish their research?

As an illustration of this point, consider side-by-side the codes of the American Society of Civil Engineers (ASCE) [20] and the Association for Computing Machinery (ACM) [21]. The ASCE Code requires members to "hold paramount the safety, health and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of their professional duties" (Fundamental Canon #1). The ACM code includes, under "General Moral Imperatives," a provision mentioning the public's "health and welfare" and "potential damage to the local or global environment" (Imperative 1.1), but there is no mention of sustainable development.[9] There is, however, an imperative to "Access computing and communication resources only when authorized to do so" (#2.8). Thus the two codes address (if somewhat obliquely) the question of what special kinds of situations members of their professions normally encounter that members of other professions do not. For while civil engineers use computers, they do not, like computer engineers, routinely find themselves in a position to access large amounts of securely stored information which only other people are supposed to access. And for their part, concern for sustainable development is a natural reflection of civil engineering's history. The earliest written laws included provisions that would now be described as related to the conduct of civil engineers and these provisions were concerned with public welfare and the environment. For instance, the code of Hammurabi (from 1750 B.C.E.) included the following provisions:

---

[9] The ASCE follows the Brundtland Commission, defining "sustainable development" as "the challenge of meeting human needs for natural resources, industrial products, energy, food, transportation, shelter, and effective waste management while conserving and protecting environmental quality and the natural resource base essential for future development" (ASCE Code, footnote #3).

53. If a man neglect to strengthen his dyke and do not strengthen it, and a break be made in his dyke and the water carry away the farm-land, the man in whose dyke the break has been made shall restore the grain which he has damaged…

229. If a builder build a house for a man and do not make its construction firm, and the house which he has built collapse and cause the death of the owner of the house, that builder shall be put to death. [22, pp. 29 and 81][10]

A Harean perspective on professional ethics suggests that, when revising its code, the ESA should attend to the question of what, if anything, makes ecology unique as a science, and the ESA should craft principles that reflect what they decide that is.

One possible route would be to do something analogous to what conservation biologists have done, by asserting that being an ecologist means being committed to certain specific values or management goals. In a famous article from over 20 years ago, Michael Soulé described conservation biology as being committed to various "normative postulates," including that "*Biodiversity has intrinsic value,* irrespective of its instrumental or utilitarian value" [23, p. 731—italics in original]. More generally, conservation biologists commonly describe their science as both "mission-oriented" and "crisis-oriented" [24]. Its mission is to provide society with knowledge and techniques necessary to further the general goal of preserving biodiversity. This implicitly describes the kind of problems conservation biologists focus on: preserving the natural variety of species and functioning ecosystems. Preservation projects commonly require social engineering, however, so conservation biology is conceived of as highly interdisciplinary, involving not only field observations and laboratory experiments, but also "adaptive ecosystem management," which is an experimental and community-involving approach to managing sustainable development [25]. Conservation biology is "crisis-oriented" because species and habitats are being lost at an unprecedented rate, and this has made many conservation biologists comfortable with a level of advocacy that scientists are usually taught to shy away from. Soulé even says that "In crisis disciplines, one must act before knowing all the facts; crisis disciplines are thus a mixture of science and art, and their pursuit requires intuition as well as information" [23, p. 727].

Two provisions of the current ESA code suggest that, by contrast, the ESA expects its members to shy away from making claims about ethics or values and from advocacy. Consider, for instance, general principle #9:

In communications, ecologists should clearly differentiate facts, opinions, and hypotheses.

No guidance is given for distinguishing "facts" from "opinion," but in scientific circles, moral judgements and statements about values are generally classified as "opinion, not fact." General principle #1 has a similar implication:

---

[10] In the United States, there is no umbrella organization for engineers, but Ed Harris (personal communication) suggests that the profession as a whole can be described thus: "engineers are the primary creators (descriptive claim) and custodians (prescriptive claim and more controversial) of technology."

> Ecologists will offer professional advice and guidance only on those subjects
> in which they are informed and qualified through professional training or
> experience. They will strive to accurately represent ecological understanding
> and knowledge and to avoid and discourage dissemination of erroneous,
> biased, or exaggerated statements about ecology.

While it does not explicitly rule out communicating one's intuitions or hunches, it
would certainly be in the spirit of this principle to label them as such, since an
intuition or hunch is generally regarded as a step down the epistemological ladder
from a hypothesis. Also, ecologists do not receive "professional training" in ethics,
and values are not open to "experience" in the sense that was presumably intended
in general principle #1. So adherence to the current ESA Code of Ethics would seem
to make it impossible for members to "offer professional advice and guidance" on
ethical questions that are not explicitly addressed in the Code itself.

General principles #1 and #9 thus suggest that the ESA will not want to follow
conservation biology's lead by committing its members to a specific view about
what has intrinsic value or any specific management goals. However, general
principle #6 could be taken to express, rather indirectly, two kinds of value
commitments:

> Ecologists will conduct their research so as to avoid or minimize adverse
> environmental effects of their presence and activities, and in compliance with
> legal requirements for protection of researchers, human subjects, or research
> organisms and systems.

One kind of value commitment is suggested by the command to "avoid or minimize
adverse environmental effects of their presence and activities." Unfortunately, this
general principle provides no guidance on what would count as an "adverse"
environmental effect. Without such guidance, one is left wondering whether all such
effects can be understood in terms of the instrumental value of ecosystem
functioning, or whether there can be, according to the ESA's Code of Ethics, effects
that are "adverse" for the environment itself, even if there is no effect whatsoever
on human interests.

That ecologists should have some concern for animal welfare is also expressed in
general principle #6, although the principle does not explicitly mention animals and
it implicitly prioritizes the value of animal welfare vis-à-vis avoiding "adverse
environmental effects." Animal welfare is included by the reference to "legal
requirements for protection of … research organisms," for these legal requirements
include federal and state animal welfare statutes governing animals used in
laboratory research, as well as standards imposed by wildlife agencies when
granting permission for various kinds of field research. This concern for animal
welfare is implicitly prioritized, however, because the same principle instructs
ecologists to "avoid or minimize adverse environmental effects" whether or not the
law requires it. The current ESA code thus says, in effect, that ecologists should take
"environmental effects" more seriously than effects on animal welfare.

From a Harean perspective, any profession whose members' activities routinely
impact the interests of sentient animals should embody in its code of ethics *some*

form of respect for those animals.[11] This is true even though morality, on Hare's view, is a construct of human language. Plants have no moral standing on Hare's view, because it is impossible to imagine experiencing the effects of actions on them. For any sentient[12] being, however, this is possible. Thus both mentally incompetent human beings (who may lack language and the ability to make moral judgments) and sentient non-human animals have morally significant interests from a Harean perspective. Put informally: the Golden Rule requires one to judge as if one had to "stand in everyone's shoes, not just our own"; but many non-human animals are sentient[13] and thus "have shoes"; so all sentient animals count, morally speaking.

So from a Harean perspective, it would be appropriate to amend the ESA code so that it does not tie concern for animal welfare to existing legal requirements. At the same time, however, it is true that from the Harean perspective, it would be appropriate to embody concern for animal welfare differently in different professions' codes. To see why, compare the situations of an ecologist studying predator–prey relations and a veterinarian practicing in a small animal clinic. The American Veterinary Medical Association (AVMA) [27] code of ethics states that "Veterinarians should first consider the needs of the patient: to relieve disease, suffering, or disability while minimizing pain or fear."[14] From the Harean perspective, one profession's code of ethics should differ from another's if the members of that profession encounter, in the course of their normal work, ethically charged situations that members of other professions do not. Studying predator-prey relationships is a perfectly normal activity for an ecologist, but it requires "letting nature take its course" in ways that result in significant amounts of preventable disease, suffering, disability, pain, and fear. The veterinarian in clinical practice, by contrast, does not normally study predator–prey relationships and is generally committed to thwarting the natural course of diseases and injuries. So while it is true that, from a Harean perspective, any profession whose members' activities routinely impact the welfare of animals should embody a concern for animal welfare in its code of ethics, the ESA Code should do this in a different way than the AVMA Code. Prioritizing concerns about animal welfare and "adverse environmental effects" in the way the ESA Code currently does may be an appropriate way of doing this. In effect, general principle #6 directs ecologists to follow current legal requirements regarding animal welfare, whatever those may be, while allowing

---

[11] This may be an over-simplification: Harean ethics makes what is appropriate to a society sensitive to background ecological and economic conditions, so perhaps it is more accurate to say that *in modern societies*, any such profession should embody concern for animal welfare in its code of ethics.

[12] Here "sentient" is intended in the standard sense it takes in the literature on animal rights and animal welfare, where it means "capable of conscious suffering and/or enjoyment."

[13] The question of which animals are sentient is a large and complicated one, but the best answer seems to be that probably all vertebrates are capable of suffering (at least from physical pain) while invertebrates (with the exception of cephalopods) probably are not. For a detailed treatment of the issue, see [26, Chap. 3]

[14] In the context of Hare's theory, note that the AVMA Code also states that the basis of its principles is the Golden Rule.

ecologists to bracket any more stringent requirements that might be appropriate in other professions' codes of ethics.

Another approach would be to amend the ESA Code to include a stand-alone principle that articulates an appropriate attitude of respect for conscious animals. Such a principle could mention any practices that are both: (a) likely to be suggested in the course of ecological research, and (b) likely to cause suffering to animals. An appropriate principle would not rule out these practices, but it would call for minimizing such practices as far as possible, consistent with good experimental design and sound management. Including this kind of principle might subtly but importantly improve the ESA Code from a Harean perspective because as indicated in the preceding section, part of the function of ILS rules is to instill virtues; properly internalizing an ILS rule produces dispositions to judge and act accordingly. Allowing or causing animal suffering may be a "necessary" part of ecological research so producing in ecologists a disposition to avoid causing "unnecessary" suffering and a corresponding disposition to condemn it in others would certainly be a good thing. Some second-guessing of conventional field research methods and experimental designs might also result, and this could lead to improvements from an animal welfare perspective. In this way, building concern for animal welfare directly into its Code rather than incorporating it by reference to existing legal standards would have the effect of making compassion a virtue of ecologists.[15]

Ecologists are likely to be suspicious of Hare's view because it is—at least ultimately—a version of utilitarianism, and utilitarianism is a sentientist view. Ecologists have good reasons to be suspicious of self-professed animal rights activists, who have often publicly opposed important efforts in ecological restoration and biodiversity preservation.[16] However, sentientist ethical philosophies need not conflict with sound environmental policy. In particular, both animal welfare and animal rights views can support "therapeutic hunting" [29, Chap. 5]. Hunting is "therapeutic" when it is motivated by and designed to secure (a) the aggregate welfare of the target species across generations, (b) the health and/or integrity of its ecosystem, or (c) both. Environmentalists are of two minds about

---

[15] Another point about general principle #6 that bears mentioning from a Harean perspective is that, as emphasized previously, ILS rules often have a decidedly non-utilitarian "flavor." From the perspective of Harean critical thinking, nothing has intrinsic value except the conscious experiences of sentient beings, because critical thinking is explicitly utilitarian. Nevertheless, one could argue that ILS rules for ecologists should inspire some kind of non-utilitarian love or respect for ecosystems. The rationale would be that an ecologist who thinks of ecosystems as more than "mere" resources, that they (or their functioning) is intrinsically valuable, will love or respect them in a way that someone who thinks that only conscious beings have intrinsic value will not, and will, as a result, be more likely to avoid indirectly harming people and other sentient animals. Bryan Norton has argued [25, 28] that the implications of environmental holism and "enlightened" anthropocentrism will converge in practice. This "convergence hypothesis" is plausible in a general way [29, 30], so it is questionable whether ecologists will do a better job if they believe that ecosystems have intrinsic value. Surely an air conditioner repairman would not do a better job if he stopped thinking of air conditioning as having merely instrumental value to the residents of the house, but *maybe* that is the case with regard to very complex systems. *Perhaps* it inspires a healthy dose of humility.

[16] Perhaps this is what inspired Soulé [23] to say that in conservation biology, concern for animal welfare is not "desirable" and that "Conservation and animal welfare … should remain politically separate."

sport hunting; they are united behind only therapeutic hunting. If animal welfare and animal rights views can support therapeutic hunting, then there need be no conflict between sentientism and the use of hunting in ecosystem management. Similarly, assuming that (1) preservation of biodiversity is vitally important to long-term human flourishing, and (2) certain interests, which only human beings have, are preeminently important from a moral perspective, then sentientist views need not oppose using lethal means to protect endangered, non-sentient organisms [30, Chap. 5; 31]. The first assumption is one that most environmentalists are ready to make.[17] The second assumption is one of common morality, and one that is shared by most prominent animal ethicists, including both Peter Singer and Tom Regan. Both would say that if, for instance, human beings could only survive by eating animals, then they would be justified in doing so [32, Chaps. 4 and 5; 33, p. 337]. Based on these two assumptions, it follows that preservation of biodiversity is vitally important to human beings, and if lethal means are required to protect this vital interest, then even a sentientist perspective can support killing animals to protect endangered, non-sentient species.

Conclusion

R.M. Hare's two-level utilitarianism suggests that codes of professional ethics arise because members of various professions encounter, in the normal conduct of their jobs, ethically charged situations that members of the lay public only encounter in unusual situations. While it is to be expected that a code of professional ethics for ecological scientists will have many provisions that overlap with those for other scientists, from the Harean perspective two issues arise for ecologists.

First, from a Harean perspective, it makes sense to ask if there is anything about the normal activities of *ecological* scientists that sets their enterprise apart. It may be that there is not, but if there is, that should be taken up explicitly when the ESA next revises its code.

Second, from a Harean perspective, any profession that routinely impacts the welfare of non-human animals should address this in its code. The current ESA code does this by directing ecologists to conform to existing legal requirements concerning animal welfare, and given the kinds of research that ecologist normally perform, this may be appropriate. On the other hand, amending its Code to explicitly endorse the view that the lives of all sentient animals have intrinsic value would, from a Harean perspective, further the goal of instilling important virtues like compassion.

---

[17] Given the catastrophist rhetoric of the environmental movement, it is strange to hear environmental philosophers say, as they commonly do, that a new, non-anthropocentric ethic must be part of the solution to environmental problems. For if long-term human interests are threatened by environmental problems, then enlightened anthropocentrism calls for their solution. However, if it is true that people who think of ecosystems as having intrinsic value are less likely to manipulate them in ways that harm people and other sentient animals, then there is nothing strange here after all. From a Harean perspective: although good utilitarian critical thinking would lead to the management of ecosystems in ways that protect humans' long-term interests, internalizing some intuitive level rules that are non-utilitarian in flavor, rules that attribute intrinsic value to ecosystems and species, might still be a good thing.

Minteer and Collins [18] call for the creation of an on-line data base of case studies in "ecological ethics." They worry that traditional ethical theory, research ethics, animal ethics, and environmental ethics provide inadequate resources for dealing with difficult cases. However, the cases they have in mind are not the kinds of cases that a code of professional ethics should address. For example, they describe a range of ethical questions that are raised by the global decline of amphibians for various stakeholders, including the scientific, conservation, zoo, and administrative/policy communities. The causes and effects of the decline are poorly understood, but a lethal fungal pathogen is expected to reach Panama very soon. Regarding just the administrative/policy community Minteer's and Collin's questions include:

> [S]hould the government close and isolate the central Panamanian forest reserves with endangered frog species for fear that people may transmit the pathogen? What are the social, economic, and political impacts of doing so? Is closure justified when it is unknown how the pathogen moves among sites of infection? What is the role for the Panamanian public? What is known of their attitudes toward amphibians, conservation, and the possible management responses? What is their place in the decision-making process? Should Panamanian officials allow collection and export of animals to zoos in other countries? Should they facilitate such exports? What intellectual property rights must be considered relative to research that might uncover economically valuable products in the course of seeking ways to protect the animals? Can Panamanian zoos handle the protection and breeding of these animals? If so, is this the best choice because the pathogen is in the country? Should zoo conservation be a priority if one can learn enough about the animals to protect them in the future? [18, pp. 1806–1807]

All of these questions can be raised from within a Harean framework on ecological ethics, but with so many relevant questions, the only thing that should be obvious about such a case is that it is not at all obvious what the best course of action would be. For that very reason, a code of professional ethics cannot be crafted so as to yield a clear-cut answer in such a case. On the Harean view, one *must* use critical thinking in such cases, and that means working through and balancing out, as much as possible, the many considerations that are on the table, including all of those on Minteer's and Collins' list of questions for the administrative/policy community, specifically (quoted above), plus all of those on their lists of questions for the scientific, conservation, and zoo communities (not listed above). Such an exhaustive analysis could only be done on a case-by-case basis. The situation is analogous to evaluating proposed research on animals. There is no way to craft, in advance, a set of rules that will answer the question of whether or not experiments are justified in every case; the best that can be done is to have a panel of committed, open-minded people examine them one-by-one. Similarly, the best that can be done in Minteer's and Collins' hard cases would be to have a panel of committed, open-minded people examine them one by one and issue recommendations.

It is worth noting that Hare's theory mirrors the complexities, uncertainties, and hazards of the moral life as it is encountered. It is simultaneously prescriptive and

descriptive and it does not give clear-cut answers in complicated cases. Yet while humans are not archangels (who could decide such hard cases in a snap), neither are they proles (who are incapable of dealing with any case in which ILS rules conflict or give inadequate guidance); the reality is that humans are something in between, and while there is good reason to be diffident when engaging in critical thinking, hard cases like those described by Minteer and Collins call out the courage to engage in critical thinking in the face of uncertainty.

The rules written down in a code of professional ethics will never give complete guidance on the truly hard cases. The rules will highlight various salient aspects of such cases, but if the cases are really difficult ones, then the code, taken by itself, will not resolve them. From the Harean perspective, it is in dealing with such cases that we must try to think like archangels, knowing all the while that we are, at best, highly fallible at it. The really hard cases thus transcend what is provided in a code of professional ethics, but if the code is well formulated, its rules will at least highlight some of the salient features of the case from which our heroic attempt at critical thinking must begin.

References

1. Moore, G. E. (1903). *Principia ethica*. Cambridge: Cambridge University Press.
2. Hare, R. M. (1993). *Essays on bioethics*. New York: Oxford University Press.
3. Kant, I. (1797/1909). On a supposed right to tell lies from benevolent motives. In (T. K. Abbott, Trans.) *Kant's critique of practical reason and other works on ethical theory* (pp. 361–365). New York: Longmans, Green, and Co.
4. Rawls, J. (1971). *A theory of justice*. Cambridge: Harvard University Press.
5. Hare, R. M. (1973). Critical study: Rawls' theory of justice—I and II. *Philosophical Quarterly, 23*, 144–155, 241–252. Reprinted in Norman Daniels (Ed.), *Reading Rawls* (1975). Oxford: Blackwell.
6. Kant, I. (1785/1948). *Groundwork of the metaphysics of morals* (H. J. Paton, Trans.). New York: Hutchinson's University Library.
7. Paton, H. J. (1948). Analysis of the argument. In Kant 1785 (1948), pp. 11–52.
8. Hare, R. M. (1981). *Moral thinking: Its levels, method, and point*. New York: Oxford University Press.
9. Clark, A. (1998). Connectionism, moral cognition, and collaborative problem solving. In L. May, M. Friedman & A. Clark (Eds.), *Mind and morals: Essays on ethics and cognitive science* (pp. 109–127). Cambridge: Bradford Books/MIT Press.
10. Kahneman, D. (2003). A perspective on judgment and choice: Mapping bounded rationality. *American Psychologist, 58*, 697–720.
11. Greene, J. D., Nystrom, L. E., Engell, A. D., Darley, J. M., & Cohen, J. D. (2004). The neural bases of cognitive conflict and control in moral judgment. *Neuron, 44*, 389–400.
12. Mill, J. S. (1861/1957). *Utilitarianism*. Indianapolis: Bobbs-Merrill.
13. Harris, C. E., Pritchard, M. S., & Rabins, M. J. (2000). *Engineering ethics* (2nd ed.). Stamford, CT: Wadsworth.
14. Hick, J. (1993). *Disputed questions in theology and the philosophy of religion*. New Haven: Yale University Press.
15. Rasmussen, K. (1927). *Across arctic America*. New York: Greenwood Press.

16. Hoebel, E. A. (1954). *The law of primitive man: A study in comparative legal dynamics*. Cambridge: Harvard University Press.
17. Jones, N. L. (2007). A code of ethics for the life sciences. *Science and Engineering Ethics, 13*, 25–43.
18. Minteer, B. A., & Collins, J. P. (2005). Ecological ethics: Building a new tool kit for ecologists and biodiversity managers. *Conservation Biology, 19*, 1803–1812.
19. Ecological Society of America. Code of Ethics. http://www.esa.org/aboutesa/codeethics.php. Accessed 25 Sept 2008.
20. American Society of Civil Engineers (ASCE) Code of Ethics. (2008). http://www.asce.org/inside/codeofethics.cfm. Accessed 25 Sept 2008.
21. Association for Computing Machinery (ACM). (2008). http://www.acm.org/constitution/code.html. Accessed 25 Sept 2008.
22. Harper, R. F. (1904). *The code of Hammurabi*. Chicago, IL, USA: University of Chicago Press.
23. Soulé, M. E. (1985). What is conservation biology? *BioScience, 35*, 727–734.
24. Van Dyke, F. (2003). *Conservation biology: Foundations, concepts, applications*. Boston: McGraw-Hill.
25. Norton, B. (2005). *Sustainability: A philosophy of adaptive ecosystem management*. Chicago, IL, USA: University of Chicago Press.
26. Varner, G. (2007). In manuscript. *Persons, Near-Persons and the Merely Sentient: An Empirically Grounded Approach to Animal Welfare and Animal Rights*.
27. American Veterinary Medical Association (AVMA). (2008). http://www.avma.org/issues/policy/ethics.asp. Accessed 25 Sept 2008.
28. Norton, B. (1991). *Toward unity among environmentalists*. New York: Oxford University Press.
29. Varner, G. (1998). *In nature's interests? Interests, animal rights and environmental ethics*. New York: Oxford University Press.
30. Varner, G. (2007). Review of Bryan Norton, sustainability: A philosophy of adaptive ecosystem management. *Environmental Ethics, 29*, 307–312.
31. Varner, G. (2001). Sentientism. In Dale Jamieson, ed., *A Companion to Environmental Philosophy* (pp. 192–203). Oxford: Blackwell.
32. Singer, P. (1993). *Practical ethics* (2nd ed.). New York: Cambridge University Press.
33. Regan, T. (1983). *The case for animal rights*. Berkeley: University of California Press.