

Logic, Liberty, and Anarchy: Mill and Feyerabend on Scientific Method

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On the surface, J. S. Mill and Paul Feyerabend appear to hold differing views of scientific method. Mill attempts to frame a set of rules or canons for testing evidence based on rationality and inference, whereas Feyerabend, in his so-called “epistemological anarchism”, calls for abandoning any attempt to separate the good from the bad in science according to a fixed view of rationality. Yet, somewhat paradoxically, Feyerabend cites Mill as the originator of what he (Feyerabend) has to say in defense of epistemological anarchy. First, I argue that those aspects of Mill’s *On Liberty* that are suggestive of an anti-rationalist philosophy are entirely compatible with the theory of scientific method Mill offers in *A System of Logic*. Second, in the process of reconciling these two works of Mill, I hope to shed light on how we are to understand Feyerabend’s critique of methodological dogmatism.

Paul Feyerabend is infamous for his calls for “epistemological anarchism,” an abandonment of the attempt to winnow the good from the bad in science according to a fixed view of rationality. The associated slogan is “anything goes.” Feyerabend writes:

[I]f you want universal standards, I say, if you cannot live without principles that hold independently of situation, shape of world, exigencies of research, temperamental peculiarities, then I can give you such a principle. It will be empty, useless, and pretty ridiculous—but it will be a “principle.” It will be the “principle” “anything goes.” (Feyerabend, 1978, p. 188)

This kind of statement has driven philosophers of science practically insane.

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In *A System of Logic*, published in 1843, John Stuart Mill declares that his aim is to attempt a correct analysis of the intellectual process called Reasoning or Inference, and of such other mental operations as are intended to facilitate this: as well as . . . to bring together or frame a set of rules or canons for testing the sufficiency of any given evidence to prove any given proposition. (Mill, 1974, p. 12)

Here, then, are two philosophers apparently at cross-purposes. Feyerabend appears to be trying to put an end to the kind of project that Mill seeks to carry out.

Yet, Feyerabend typically cites John Stuart Mill as the *originator* of much of what he has to say in defense of epistemological anarchy. Feyerabend cites Mill's arguments in the essay *On Liberty*, co-written with Harriet Taylor.

The fact that arguments from *On Liberty* can be used in what seems to be an attack on the very aim of the *System of Logic* suggests that there is a conflict within Mill's own works. I will argue, however, that those aspects of *On Liberty* that are suggestive of what Feyerabend would call an anti-rationalist philosophy of science are entirely compatible with the theory of scientific method offered in Mill's *Logic*. In the latter, I will show, Mill offers us a way of thinking about rules of scientific method that leaves room for the pluralism and openness of *On Liberty*. In the process of reconciling Mill's two works, I hope also to shed some light on how Feyerabend's critique of methodological dogmatism can be understood in a way that does not lead to utter despair over the prospects for a fruitful, normative methodology of science.

"ANYTHING GOES" AND MILL'S *ON LIBERTY*

In a recent essay, Elisabeth Lloyd corrects a common misunderstanding regarding Feyerabend and that phrase "anything goes." Feyerabend never intended this to be any kind of a positive recommendation. Feyerabend wrote that the slogan "does not express any conviction of mine, it is jocular summary of the predicament of the rationalist" (Feyerabend, 1978, p. 188). Feyerabend does not suggest that one should approach science with the belief that "anything goes," and then just act in an arbitrary manner. "Anything goes" is simply the only thing left to say if one insists, in the face of the principle-defying history of science, on having some universal methodology. Because progress in science has occurred in a manner that could never be captured by any universal set of rational principles, any such proposed principle would at some point be an *obstacle* to some important advance. Thus, an interest in learning the truth is, for Feyerabend, one reason for abandoning the quest for a fixed set of rules governing rationality. Here Feyerabend proclaims his debt to Mill. He notes that the arguments supporting his criticisms of the use of methodological norms to squelch opposing viewpoints were framed by Mill in *On Liberty*, and adds, "It is not possible to improve upon his arguments" (Feyerabend, 1978, p. 86)

The well-known thesis of *On Liberty* is that "the sole end for which mankind are warranted, individually or collectively, in interfering with the liberty of action of any of their number, is self-protection" (Mill, 1977, p. 223). It is in a civilized society's own best interest to be maximally tolerant of actions that the majority in that society find distasteful,

even repugnant. The limit on such tolerance is reached when action threatens harm against another person.

Central to Mill's essay is the application of this general principle to the realm of belief and expression. He notes that "the peculiar evil of silencing the expression of an opinion is, that it is robbing the human race; posterity as well as the existing generation; those who dissent from the opinion, still more than those who hold it" (Mill, 1977, p. 229).

Mill explains that the proliferation of opinions is beneficial in two ways. First, you ought to tolerate the proliferation of opinions at odds with your own, because one of them might be correct (and your own in error). Encouraging the expression of the opposing opinion creates the possibility of being corrected. Second, even if your own opinion is correct, you will not only appreciate its correctness better, but you will have a better understanding of just what your opinion *is*, of just what it *means*, if your embrace of that truth is subsequent to a vigorous defense of it against an opposing view.

In the first kind of case, Mill is concerned with the requirements for correcting a deeply-held false opinion. Experience alone is insufficient, for discussion is needed to arrive at a correct interpretation of experience. Furthermore, whereas "[w]rong opinions and practices gradually yield to fact and argument," discussion is needed, because "facts and arguments, to produce any effect on the mind, must be brought before it" (Mill, 1977, p. 231).

Such facts and arguments cannot be conjured at will. Being corrected by a fact or argument often requires listening to a person who has the desire, ability, and liberty to express himself on its behalf. You harm your own chances of learning truth by declaring him *in advance* to be outside the boundaries of respectable opinion.

In the second kind of case, Mill argues for the benefits of allowing the advocacy of falsehoods. There are two kinds of such benefits. The first relates to the conditions required for knowledge. According to Mill, the most significant element of the "cultivation of the understanding" is "learning the grounds of one's own opinions," and this requires consideration of opposing viewpoints. He writes, "Even in natural philosophy there is always some other explanation possible of the same facts; some geocentric theory instead of heliocentric, some phlogiston instead of oxygen; and it has to be shown why that other theory cannot be the true one: and until this is shown, and until we know how it is shown, we do not understand the grounds of our opinion" (Mill, 1977, p. 244).

Mill makes a similar point in *A System of Logic*: often, several competing theories can explain a single set of facts. Mill's position in the *Logic* is that any claim to have strong evidence for a theory must be grounded in an argument that rules out competing alternatives. But, according to *On Liberty*, the ability to give such an argument often requires becoming acquainted with the alternatives, not just superficially, but "from persons who actually believe them; who defend them in earnest, and do their very utmost for them." Absent such a confrontation, the majority might hold a belief that happens to be true, but "it might be false for anything they know: they have never thrown themselves into the mental position of those who think differently from them, and considered what such persons may have to say; and consequently they do not, in any proper sense of the word, know the doctrine which they themselves profess" (Mill, 1977, p. 245).

The second benefit of exposure to falsehoods concerns meaning. Mill writes, "not only the grounds of the opinion are forgotten in the absence of discussion, but too often the meaning of the opinion itself" (Mill, 1977, p. 247). A complete comprehension of the

meaning of an idea depends on the deployment of that idea in response to one who opposes it. To not only hold a belief, but to understand what that belief means, requires that one have some significant awareness of the consequences of putting that belief into action, and Mill suggests that defending the belief helps one become aware of such consequences.

Mill calls upon the proliferation of opinions as an aid in the pursuit of and comprehension of the truth. The need for such proliferation, according to Mill, is so great that “if opponents of all important truths do not exist, it is indispensable to imagine them, and supply them with the strongest arguments which the most skillful devil’s advocate can conjure up” (Mill, 1977, p. 245). This brings us back to Feyerabend.

Lloyd points out that Feyerabend can be seen as playing the role of the “devil’s advocate,” which Mill’s essay insists is important for achieving the kind of open consideration of alternatives that is requisite to the pursuit of truth. For example, Feyerabend argued vigorously on behalf of astrology in one context, but in another admitted, “Astrology bores me to tears. However, it was attacked by scientists, Nobel Prize winners among them, without arguments, simply by a show of authority and in this respect deserved a defense” (Feyerabend, 1991, p. 165).

Viewed in this way, some of Feyerabend’s more outrageous writings can be understood as “quite principled and unified” (Lloyd, 1997, p. 403). When Feyerabend perceives that some point of view is being vilified or neglected, on no other grounds than the dislike or ignorance of it on the part of authorities in the intellectual world, he would *challenge* the intellectual community to think about that point of view, to answer its claims with arguments, even if that meant offering illogical arguments himself.

PRINCIPLES OF SCIENCE AND RULES OF ART

Although Mill’s central concerns in his *A System of Logic* departed significantly from those in *On Liberty*, and although the theories of knowledge in the two works seem superficially to be at odds, I will argue that they are entirely compatible. What’s more, I will argue that the two works complement one another in just the right way, offering a view of how truth might be effectively sought by understanding underlying principles of rationality, while at the same time making clear the need for a quite broad liberty of belief and expression even in the most flagrant violation of those very same principles, not in spite of our interest in learning the truth, but in pursuit of that interest.

In *A System of Logic*, Mill states that logic could be defined as “the science of the operations of the understanding, which are subservient to the estimation of evidence” (Mill, 1974, p. 12), and announces his intention to give “a correct analysis of the intellectual process called Reasoning or Inference” and “on the foundation of this analysis” to present “a set of rules or canons for testing the sufficiency of any given evidence to prove any given proposition” (Mill, 1974, p. 12).

In every practical matter, as Mill saw it, one is guided by certain “rules of art,” and every set of rules of art is based on some body of science that justifies those rules. The rules of art, being formulated as imperatives, are premised on some proposed end to be attained. Scientific investigators seek to formulate a principle describing a causal regu-

larity between the desired end and those “causes and conditions” that produce it: “Art then examines these combinations of circumstances, and according as any of them are or are not in human power, pronounces the end attainable or not” (Mill, 1974, p. 944).

Strict rules of art cannot be articulated, however, until the appropriate theorem has been established by science. In the meantime, some practical rules are needed to guide conduct, “in the first place, because the theory can seldom be made ideally perfect,” and secondly, because any statement of a rule of art that took into account “all the counteracting contingencies” would be too complex for practical use (Mill, 1974, p. 944–945).

Consequently, a “wise practitioner” will regard rules of art as provisional, and will refer continually to “the scientific laws on which they are founded,” for it is only these that will tell one “what are the practical contingencies which require a modification of the rule, or which are altogether exceptions to it.” Such an ability to look *past* the rules of art, to the underlying scientific principles on which the art is based is needed even for attaining “the specific end which the rules have in view” (Mill, 1974, p. 945–946).

Therefore, Mill deplors those who regard “such unbending principles” not only as universal and binding with respect to the specific end postulated in the rules, but as “rules of conduct generally, without regard to the possibility, not only that some modifying cause may prevent the attainment of the given end by the means that the rule prescribes, but that success itself may conflict with some other end, which may possibly chance to be more desirable” (1946).

Here are three important points: First, rules of art that are based on an incomplete science are necessarily provisional. Second, scientific principles that justify rules of art typically will have *ceteris paribus* clauses and other qualifications, so that anyone acting according to a rule of art will be wise not to adhere blindly to the rule, but will refer often to the scientific principles themselves, to see whether those principles justify applying the rule to the case at hand. Third, even if one finds a principle of science that is truly universal, it does not follow that one must always act on any rules based on that principle, due to the possibility of a conflict with some overriding aim.

If we apply these general claims to the rules of logic, we can conclude the following: (1) to the extent that Mill’s analysis of the science of logic is not the final word on the subject, his rules of inference must be taken to be provisional; (2) to the extent that the principles on which Mill’s rules of inference are based are subject to qualifications and *ceteris paribus* conditions, the rules themselves will sometimes lead one into errors, and anyone reasoning according to them should take into consideration the possibility of exceptions; and (3) even if Mill’s analysis of the science of logic has discovered truly universal and exceptionless rules, there may be cases where other aims take on greater importance than the aim of logic, thus prompting a suspension of those rules.

An important objection has to be considered, however. The context for Mill’s discussion of the relationship between science and art is an argument, not about logic, but about the scientific basis for social policy. He is denouncing “those who deduce political conclusions not from laws of nature, not from sequences of phenomena, real or imaginary, but from unbending practical maxims” (Mill, 1974, p. 889).

It is incumbent on me, then, to show that Mill’s general comments about rules of art can rightfully be applied to the rules of logic. This will require a brief survey of the scientific underpinnings of Mill’s *Logic*.

THE SCIENCE AND ART OF LOGIC

In Mill's *Examination of the Philosophy of Sir William Hamilton*, he writes that the "theoretic grounds" of logic "are wholly borrowed from Psychology, and include as much of that science as is required to justify the rules of the art" (Mill, 1979, p. 359). Although Hamilton insists that logic is both a science and an art, Mill notes that Hamilton conceives the subject matter of the science of logic to be "the laws of thought as thought," setting out "the conditions subject to which by the constitution of our nature we cannot but think." But Mill observes that *this* science, the science of the laws of thought as thought, is not really logic at all, but psychology. Consequently, for Hamilton, all that can genuinely count as logic is "the narrowest conception of an Art—that of a mere system of rules. [Hamilton's definition] leaves Science to Psychology, and represents Logic as merely offering to thinkers a collection of precepts, which they are enjoined to observe, not in order that they may think, but that they may think correctly, or validly" (Mill, 1979, p. 359).

From Mill's comments regarding rules of art, it should be apparent why he would abhor this idea of logic as "a mere system of rules." If one has only the rules to adhere to, without an awareness of the scientific principles underlying those rules, one will be at risk of applying the rules blindly, ignoring the complicating conditions and qualifications that might require one to set aside the rules.

Mill has often been accused of presenting a "psychologistic" logic, based on his comments about the relationship between psychology and logic. It is important to be clear, however, on what exactly constitutes the science of logic, and how it relates to Mill's rules of art. (I will presently concern myself only with the inductive part of Mill's *Logic*.)

As R. F. McRae has pointed out, the theoretical basis for the rules of inductive reasoning is to be found in the Mill's discussion of causation. Mill writes, "The notion of Cause being the root of the whole theory of Induction, it is indispensable that this idea should at the very outset of our inquiry, be, with the utmost practicable degree of precision, fixed and determined" (Mill, 1974, p. 326).

For Mill, the problem of causation lies at the root of the fundamental type of problem addressed by inductive reasoning. There *is* a uniformity to nature, according to the Law of Causation, but the uniformities are not apparent in nature simply as we experience it, because it is a uniformity consisting of a tangled web of individual causal connections. The task of the scientist is to single out particular threads in this web and identify them. In order to formulate rules of inductive logic, Mill seeks to solve, in its most general form, the problem of isolating causal connections. It is the analysis of *this* process, the solution to a general *type* of problem that forms the scientific basis of inductive logic. Mill writes,

To certain facts, certain facts always do, and, as we believe, will continue to, succeed. The invariable antecedent is termed the cause; the invariable consequent, the effect. And the universality of the law of causation consists in this, that every consequent is connected in this manner with some particular antecedent, or set of antecedents. (Mill, 1974, p. 327).

The universality of the law of causation is "the source from which the canons of the Inductive Logic derive their validity" (Mill, 1974, p. 327).

Mill's analysis of causation discloses a principle relating a phenomenon (the solution to a characteristic type of problem), and a process that produces that phenomenon (the mental process of causal reasoning). Mill's rules of inductive reasoning are the rules of art based on that "scientific" principle.

Consider the Method of Difference. Mill's discussion of it has three elements. First, he states a rule of art. Second, he notes the "axioms" involved in the use of this method. Third, he states a "canon," which is a "regulating principle" of the method.

The rule of art is the following:

If our object be to discover the effects of an agent A, we must procure A in some set of ascertained circumstances, as A B C, and having noted the effects produced, compare them with the effect of the remaining circumstances B C, when A is absent. If the effect of A B C is *a b c*, and the effect of B C, *b c*, it is evident that the effect of A is *a*. (Mill, 1974, p. 391)

Here the method is stated as a hypothetical imperative, telling the investigator what steps to follow, conditional on her having a certain aim, and then indicating what conclusion may be drawn from a specific outcome of performing the procedure. This is clearly a rule of art.

Mill then lists two axioms "implied in this method." First, "Whatever antecedent cannot be excluded without preventing the phenomenon, is the cause, or a condition, of that phenomenon." Second, "Whatever consequent can be excluded, with no other difference in the antecedents than the absence of a particular one, is the effect of that one" (Mill, 1974, p. 391). These axioms follow directly from Mill's discovery that the cause of a phenomenon is the collection of antecedent conditions, on the occurrence of which the occurrence of the phenomenon itself is invariably and unconditionally consequent.

Finally, the canon, or "regulating principle" of the Method of Difference is the following:

If an instance in which the phenomenon under investigation occurs, and an instance in which it does not occur, have every circumstance in common save one, that one occurring only in the former; the circumstance in which alone the two instances differ, is the effect, or the cause, or an indispensable part of the cause, of the phenomenon. (Mill, 1974, p. 391)

The canons occupy a middle ground between the rules of art stated in the methods, and the abstract scientific principles stated in the axioms. They show how those axioms apply to the type of situation in which the inquirer is interested. The canon is a statement of fact, formulated like a scientific principle, but so as to be more useful than the axioms to the person seeking to apply the rule of art.

MILL'S METHODS: AN "ANTI-RATIONALIST" METHODOLOGY

This analysis shows that the rules of inductive method are rules of art to which there might be exceptions. Why *should* these rules have exceptions?

Consider again the three general points regarding rules of art made earlier. First, rules of art may be provisional because they are formulated on the basis of an imperfect science. In the Preface to the *Logic*, Mill notes that he has endeavored to refute those who denied the very possibility of an inductive logic “in the manner in which Diogenes confuted the skeptical reasonings against the possibility of motion; remembering that Diogenes’ argument would have been equally conclusive, though his individual perambulations might not have extended beyond the circuit of his own tub” (cxiii). Here, Mill seems to hint that his theory might not be complete, while insisting that its very existence is conclusive proof that such a theory is possible.

The second way in which the universality of rules of art is limited is through the qualifications and *ceteris paribus* conditions that might be required in a full statement of the underlying scientific principles. Mill certainly intends for investigators to keep such points in mind when using his inductive methods. For example, one can apply Mill’s rules of induction only on the condition that one has properly described the antecedents and consequents, which is partly a matter of observation. The experimental investigator has to begin with a decomposition of the “chaos” of antecedent and consequent conditions taken as wholes into distinct facts (Mill, 1974, p. 379). Mill insists, however, that one cannot state rules of art for this task (Mill, 1974, p. 379–380).

Furthermore, any belief that one has properly represented the facts of observation can only be provisional, and may stand in need of correction. Mill writes,

It is only essential, at whatever point our mental decomposition of facts may for the present have stopped, that we should hold ourselves ready and able to carry it farther as occasion requires, and should not allow the freedom of our discriminating faculty to be imprisoned by the swathes and bands of ordinary classification; as was the case with all early speculative inquirers, not excepting the Greeks, to whom it seldom occurred that what was called by one abstract name might, in reality, be several phenomena, or that there was a possibility of decomposing the facts of the universe into any elements but those which ordinary language already recognized. (Mill, 1974, p. 381)

Here Mill clearly states that any apparently perfect application of his rules of inductive reasoning could be in error in a way that simply *more induction* will not correct. Criticism of the language used to describe the facts on which that induction rests may be necessary.

The third and final limitation on the universality of rules of art is that the aim that a certain practical rule takes as given might be overridden by some other aim. We know from Mill’s definition of logic as “the science of the operations of the understanding, which are subservient to the estimation of evidence” (Mill, 1974, p. 12) that the individual applying his rules of inference aims to estimate the strength of the evidence for some claim.

Note two things: First, the aim is not *collective* agreement as to the truth of some claim. Second, the aim is not a keen understanding of the *meaning* of the proposition in question.

Mill writes in the Introduction to the *Logic*, “The sole object of Logic is the guidance of one’s own thoughts” (Mill, 1974, p. 6). Where the *Logic* is concerned only with how the individual should go about evaluating the evidence for or against a proposition, with the aim of forming her own beliefs, *On Liberty* is concerned with *social* conduct:

Supposing I have made up my mind regarding some proposition, even on the basis of the appropriate *logical* considerations, how should I treat the views of others? What kinds of responses to disagreements are justified? In answering these questions, Mill discovers that toleration, even encouragement, of views in conflict with one's own are to one's own epistemic benefit, and to the benefit of society in general.

Furthermore, because of the broader benefits that derive from the clash of opinions, I might choose to set aside Mill's rules for the sake of the greater good. I might recognize that for my own selfish interest in evaluating the strength of the evidence, it would be better to stick to the rules, but decide that it would be a greater advantage to my fellow citizens if I defend some view that was otherwise being neglected, even if deep down I suspected there was very little evidence in support of it after all. This is how we might interpret much of what Feyerabend did during his lifetime. Here the aim of helping the community to have access to a broader range of views, and so to a greater chance of learning the truth, supersedes my personal aim of evaluating the evidence for the proposition in question. Lloyd rightly points out that the social context in which scientific authority is deployed was a lifelong concern of Feyerabend's, as well as part of Mill's broader concern with the use of authority to suppress opinion.

Turning to the second point: recall Mill's claim that a belief that has ceased to be challenged, and hence defended, might lose much of its worth for us, even if it is in fact true. It might come to be held as a "dead dogma." Although we continue to have a true belief, we lack a vivid apprehension of its truth. Here again, sticking to the rules of logic may serve the aim of correctly estimating the strength of evidence. Yet, I might choose to ignore those rules and mount a quixotic attack on a true belief, in order to provoke a defense of that truth. My aim might be to gain a vivid appreciation of that truth.

LOGIC AS A PARTNER TO LIBERTY

We can sum up Mill's position as follows: One can state rules of inductive logic. These are rules of art for evaluating the evidence for any given proposition. They are based on principles derived from an analysis of the kind of problem inductive reasoning seeks to solve: how to separate a single causal relationship from a mixture of many different causal relationships. The rules are provisional insofar as the principles on which they are based might be incomplete or incorrect. The rules are subject to limitations insofar as the principles on which they are based are subject to qualifications, such as the condition that one must use an appropriate descriptive vocabulary. Finally, these rules are subject to limitations insofar as other aims might be more important than the aim of determining for one's self the strength of the evidence for a given proposition. One might aim to provoke debate, in order to encourage criticism and the consideration of alternatives, and in order to promote a more vivid apprehension of whatever truths might already be widely believed.

For all these reasons, a proponent of Mill's philosophy, not only as it appears in *On Liberty*, but as it appears in the *Logic*, might do all the sorts of things that Feyerabend did: advocate seemingly discredited theories, look for weak spots in apparently well-confirmed theories, employ polemical tricks and slick arguments on behalf of despised views, etc. But Feyerabend was *not* a proponent of Mill's philosophy as it appears in *both* works. Indeed, he seems to have ignored the *Logic* entirely. Perhaps he should not have.

Mill, I have argued, would have agreed with Feyerabend's insistence on the impossibility of formulating universal, exceptionless rules of scientific method that could always be used to separate well-supported from poorly-supported theories without doing damage to the prospects for continued scientific progress. Nevertheless, Mill found it quite useful to go ahead and formulate some rules of practice for use in scientific inquiry.

At times, Feyerabend seems open to Mill's kind of provisional, exception-laden methodology. Clarifying his use of the phrase "anything goes," he writes that this phrase "is the only way in which those firmly committed to universal standards and wishing to understand history in their terms can describe my account of traditions and research practices . . . If this account is correct then all a *rationalist* can say about science (and about any other interesting activity) is: anything goes" (Feyerabend, 1978, p. 40, emphasis in original). Implicitly, although a "rationalist" might be reduced to saying "anything goes," a non-dogmatic methodologist, a person who is willing to venture a theory of scientific method that is provisional, subject to exceptions, and subject to vetoes in the pursuit of other aims, can say many interesting things about inductive reasoning and the evaluation of evidence: this is what Mill did.

Although Feyerabend denies that "anything goes" constitutes his own view of scientific method, his almost uniformly negative rhetoric makes it easy to conclude that it is. There is not much to distinguish "anything goes" from "rules tend to get broken," and one can easily get the impression that Feyerabend has little else of a *positive* nature to say about how science proceeds. This is partly a matter of differing aims. Feyerabend was centrally concerned with the problems confronted by Mill in *On Liberty*, whereas the professional philosophers at whom Feyerabend aims so many of his barbs are more interested, typically, with the problems addressed in Mill's *Logic*. Both Feyerabend and his critics fail to notice that the *Logic* itself, although it offers an inductive method, does not propose the kind of universal standards that Feyerabend considered threatening to liberty.

Although I believe that Feyerabend may at times be receptive to Mill's kind of provisional theory of scientific method, he is more concerned with how any such theory might be used. Feyerabend worries that theories of confirmation, or of demarcation, will be used to protect an already-too-powerful scientific and intellectual elite against challenges from outside the "tradition" of Western science and intellectualism. He worries that these elites will use their authority and resources to squelch discussion of alternatives to, not only specific theories, but also the broader intellectual tradition in which those theories came to life. He reads *On Liberty* as offering a solution to this very problem: "Proliferation is introduced [by Mill] as the solution to a problem of *life*: how can we achieve full consciousness; how can we learn what we are capable of doing; how can we increase our freedom so that we are able to decide, rather than adopt by habit, the manner in which we want to use our talents?" (Feyerabend, 1981, p. 67).

Mill tackles this problem with a clearer eye. Although maintaining that even logical rules have exceptions, Mill articulates a science and an art of inductive reasoning. He offers this logic not as a trump on all other discussions, a tool to help scientific authorities coerce the beliefs of everyone else, but as a tool for everyone—to examine, but also to discard if they wish. It, too, is to be subject to the open discussions encouraged by *On Liberty*. We sometimes cannot separate the discussion of scientific theories from the discussion of theories of science, as recent debates over creationism, for example, show.

Feyerabend fought against method in order to fight against the suppression of alternative points of view. Mill, however, offered his method as a tool in that same fight. In his *Autobiography*, Mill reports that his aim in writing the *Logic* had been, in part, to combat what he saw as dogmatic policies and institutions arising from the “German, or a priori view of human knowledge,” which he believed drew support from errors of logic (Mill, 1944, pp. 157–158). Even in the *Logic*, Mill was concerned with a kind of liberation.

Feyerabend made himself a genuine headache for many philosophers of science, but Mill’s arguments should convince philosophers to be grateful for this. Mill also made it clear why the complementary task was also important: we need devil’s advocates, but we also need methodologists with ideas about how to evaluate the arguments of the orthodox individuals as well as those of the devil’s advocates—not formulas or final answers, mind you, but analytical tools. The tools themselves might need to be repaired, traded in, or sometimes ignored, but they are an important part of the debate.

NOTES

1. Thanks to Cassandra Pinnick for instigation and comments and to a helpful audience at Western Kentucky University, where an earlier version of this paper was presented.
2. I was prompted to think about these issues by an insightful recent essay by Elisabeth Lloyd. Lloyd argues for taking Feyerabend’s repeated tributes to Mill seriously, and interpreting much of what seems outrageous in Feyerabend as the application of ideas that can be found in Mill’s essay.
3. Although Feyerabend is no stickler regarding consistency, and often argues in an opportunistic manner, his allegiance to Mill, Lloyd points out, is not merely opportunistic. There is every reason to believe that he genuinely admired the John Stuart Mill of *On Liberty*. He gave Mill credit for anticipating his own views throughout his career, and never disparaged Mill in ironic asides, as he did when appropriating ideas for merely tactical use (Lloyd, 1997, p. 397).
4. I see no reason to think that Mill means to *exclude* scientific discourse from the general arguments of *On Liberty*, as argued by Struan Jacobs (Jacobs, 1986). Jacobs holds that the theory of knowledge of the *Logic* is “verificationist,” while that of *On Liberty* is “falsificationist” (cf. also Jacobs, 1991). Jacobs exempts science from the epistemology of *On Liberty*, claiming that this saves Mill from being committed to two incompatible philosophies of science. I agree that Mill is not incoherent in this way, but Jacobs reaches this conclusion by compounding two errors. The first error is to regard the two works as presenting incompatible epistemologies. The second error is to exclude scientific discourse from the arguments of *On Liberty*. Mill makes no such exemption, nor does Jacobs provide any rationale that would justify such an exemption.

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