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MILL'S FALLACIES: THEORY AND EXAMPLES

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Abstract:

In noting contemporary neglect of Mill's work on fallacy, Hansen and Pinto say that his account is tied more closely to scientific methodology than to problems of public discourse and everyday argumentation. This paper re-examines Mill's fallacies from a rhetorical perspective, assessing the extent to which his examples—drawn from the domain of popular superstition, science, philosophy, and public discussion—fits his theoretical structure. In articulating the relationship between Mill's philosophical assumptions and the discursive practices of the fields from which he draws his examples, it will suggest the ambiguities in Mill's mentalistic, rationalistic, inductivist approach and the inescapable rhetoricity of his examples.

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In their recent collection of classical and contemporary readings on fallacy Hans Hansen and Robert Pinto include a selection from Mill's *System of Logic*, praising his treatment of the subject as the "first to give a systematic account of the fallacies from an inductivist point of view" (17). They also note that despite the fact that he "cannot be accused of giving a shallow and unoriginal account of the fallacies," (18) Mill's work has been "much neglected by modern scholars." They speculate that the neglect of his contribution may be traceable to the fact that his "account is tied more closely to scientific methodology than to problems of public discourse and everyday argumentation" that have preoccupied informal logicians interested in fallacy theory. (18) If that is the case, perhaps recent interest in the rhetoric of the disciplines, though not as salient in the field of informal logic as it is in rhetoric, can offer exigence for a reexamination of Mill's fallacies. As rhetoricians have turned their attention to describing the discursive practices of other fields, we may ask what such a perspective might reveal about Mill's account of fallacious reasoning, which draws so many of its examples from scientific, economic, philosophical, and popular public discourse. To answer that question, this essay will examine Mill's notion of fallacy and assess the extent to which his examples, drawn from a wide range of his contemporary discourse, fit his theoretical structure. It will attempt to articulate the relationship between Mill's philosophical assumptions and the discursive practices of the varied fields from which he chooses his examples. In doing so it will reveal both ambiguities in the theory and the inescapable rhetoricity of the examples. We will first discuss Mill's definition of fallacy, then examine examples in each category of fallacy that he identifies, drawn from popular belief, philosophy, science, and social theory.

Mill's Definition of Fallacy

Comparison of Mill's definition of fallacy with his predecessors' reveals some similarities but also suggests how his basic notion of fallacy differs somewhat from theirs. Like Whately, whose work on fallacy appeared only twenty years before Mill's, Mill acknowledges that even though it is impossible to corral fallacies into rigid

classification schemes, some degree of systematization is required to improve on Bentham's treatment of fallacy as the "loci communes of bad arguments on some particular subject." (484) But whereas many of the fallacies identified by Whately and Bentham fall into the highly contestable categories of unconscious error and deliberate deception in public discourse, Mill tries to steer a less moralistic, more philosophical course. Unlike Whately and Bentham, he wants to set aside indifference, bias, moral failings, hurry and inattention as sources of erroneous opinions and professes no concern with motive or the ethical dimensions of argumentation. Mill's argumentative world is thus more purely intellectual and less dialectical than that of his predecessors. For him fallacy lies in the "*intellectual operation* of admitting insufficient evidence as sufficient (my emphasis)." (483) Sidestepping dialogic argument or controversy between participants who are trying to sway others in the deliberative forums of ecclesiastical and political debate, Mill's definition of fallacy focuses on the ways in which people reason to convince themselves. It is my contention, however, that despite his attempt to remove dialogic argument from consideration, once Mill adduces examples to illustrate the kinds of faulty arguments that people convince themselves of, he inevitably launches critiques of actual practices and ideologies.

In addition to excluding bias and indifference as a sources of error, Mill also wants to bracket the contaminants of will and feeling. As he says, "We cannot believe a proposition only by wishing, or only by dreading, to believe it." (482) And he is confident that it is possible to separate the emotional motives that make people adhere to positions from intellectual ones: "If the sophistry of the intellect could be rendered impossible, that of the feelings, having no instrument to work with, would be powerless." (484) The philosophical and psychological world of Mill's fallacies, then, is one in which the rational, appetitive, and emotional faculties function independently. It constitutes an idealized realm of intellectual inquiry, pre-dialectical, rationalistic, self-contained, compartmentalized, removed from the world of rhetorical complexity and interaction.

Despite Mill's attempt at keeping the study of fallacy uncontaminated, the place where he introduces the subject of fallacy within the treatment of logic suggests the difficulty of confining one's self to a wholly mental universe of purely rational self-persuasion. Within Mill's *System of Logic* the discussion of fallacy occupies Book V. It follows Book IV, called "Of Operations Subsidiary to Induction," which includes extended discussions of observation, description, abstraction, naming, definition, classification, and the principles of philosophical language—all intellectual operations introducing considerations of natural language use. And it precedes the broadening out from logic that occurs in Book VI, "On the Logic of the Moral Sciences," in which Mill arrives at the rather surprising conclusion (for a logician) of calling for the development of a science of the formation of character, which he terms Ethology. Thus the consideration of fallacy follows the main body of Mill's logic and is situated between the study of natural language reasoning and a call for the development of moral science. Its position itself hints at the force of linguistic, psychological, and ethical influences on reasoning as carried on in the philosophical, scientific, and popular discourse from which Mill draws his examples.

Although himself a powerful advocate of political and social policies, in the *System of Logic* Mill forges no alliance between the study of fallacy and logic's theoretically untidy counterpart, rhetoric, and perhaps this separation has also deflected rhetorical scholarship from the fallacies. Early in the *Logic* he articulates his view of rhetoric as a purely presentational art, in contrast with the mentalistic function of logic: "The sole object of Logic is the guidance of one's own thoughts: the communication of those thoughts to others falls under the consideration of Rhetoric, in the large sense in which that art was conceived by the ancients; or of the still more extensive art of Education." (3) For Mill rhetoric, the presentation of knowledge ascertained through logic, falls under the domain of education—by no means a trivial concern in his other writings, though not one he takes up in the Logic. Nevertheless, his treatment of fallacy implies a broader, more inclusive concept of rhetoric than the presentational view he explicitly offers. As examination of his examples will show, attributing fallacy often entails articulating

assumptions, stances, gestures, ideologies that are *not* represented in descriptions of reasoning procedures. In other words, from an Aristotelian rhetorical perspective a significant contribution of Mill's study of fallacy can be seen as its emphasis on enthymemic reasoning. Mill's examples reveal how arguments are created by reasoning from the "knowledge" (complete or incomplete, justified or unjustified) shared by audiences (both specialized and general). I would argue that such reasoning has an inescapable rhetorical dimension. Thus the more we look at the way fallacies are expressed in discourse, the harder it becomes to maintain Mill's clean distinction between logic and rhetoric, to keep logic purely mental and rhetoric purely presentational.

After so rigorously separating the domains of logic and rhetoric, how does Mill view the function of a theory of fallacy? For whom and for what is it useful? No logical ideologue, Mill is fully aware that "wrong inferences, incorrect interpretations of experience, unless after much culture of the thinking faculty, are absolutely inevitable." (481) No logical ideologue, Mill recognizes the limits of logic's applicability. He acknowledges that we discuss many matters that we cannot be certain about and that even if people followed the principles of proof laid out in his logic, "the number and value of the truths ascertained would be limited by the opportunities, or by the industry, ingenuity, and patience of the individual inquirer." (481) Clearly, he is aware that the standard of evidence required by logic is simply not attainable in much human discourse. Nevertheless, people do come to conclusions, and that being the case, we all know that they will often leap to bad ones. Mill's theory of fallacy concerns such leaps into belief; it points out what he considers delusions of knowledge, false consciousness of certainty. Thus he sees the study of fallacy as concerned with inductive reasoning procedures rather than actual arguments. It enables us to recognize the "varieties of apparent evidence which are not real evidence." He takes as his task the analysis of "the conditions under which the human mind persuades itself that it has sufficient grounds for a conclusion which it has not arrived at by any of the legitimate methods of induction—which it has not, even carelessly or overhastily, endeavoured to test by those legitimate methods." (482) He views fallacious self-persuasion as mental and internal—"the human mind persuades itself," not necessarily through social interaction. But a perspective that is more rhetorical than philosophical flags the intrusion of the term "persuasion." Are we to assume that self-persuasion is wholly logical, held to a standard essentially different from other, more impure, rhetorical or presentational kinds of persuasion? Furthermore, how can we know whether or to what extent any human mind (including our own) has persuaded itself except through its articulation of arguments, and can we separate the representation of arguments from the internal act of self-persuasion?

As the above questions suggest, Mill's mentalistic approach to fallacy produces both gains and losses. The separation of fallacy from dialogic argumentation allows for a more precise description of mental operations, but at the cost of treating the procedures by which we reach conclusions in artificial isolation from discursive give and take. Indeed, it is precisely this discursive give and take that Mill later describes and advocates so eloquently in the treatises that have been most admired by rhetoricians, *On Liberty* and *On the Subjection of Women*. In those treatises he argues that we arrive at truth only as a result of forging arguments that stand up to scrutiny and counterargument in the public sphere, he exhorts his readers to imagine the responses and challenges that others might make to their most dearly held positions, and he invites readers to challenge social and political presumptions rather than accept present conditions as definitively establishing burden of proof. Thus his own polemical practice and the reflection on it that occurs within his most well known treatises does not corroborate the *Logic*'s elaboration of a reasoning process that operates independently of rhetorical concerns.

The purpose of the following analysis is to assess Mill's theory from a rhetorical perspective, neither dismissing it nor ignoring its inconsistencies and strains. Once we start considering actual arguments as people use them as a basis for action or belief rather than limiting our examination to a perspective that asks what constitutes "sufficient grounds for a conclusion," evaluation becomes complicated and the attribution of fallacy contestable. The

Perelmanian problem of adherence arises: How firmly does any reasoner "stick to" conclusions, and for whom and for what purposes do the grounds have to be sufficient? Do (or should) scientists, philosophers, and people who hold folk beliefs adhere to them with the same intensity and duration? Despite Mill's stature as the determiner of "legitimate methods of induction," both his own practice as an arguer for liberty and equality and his examples of fallacious argument suggest that it remains debatable when and which discursive practices need to meet the standards of adequacy he articulates. When we evaluate arguments—and even when we persuade ourselves of beliefs—we attend not only to logical sufficiency but also to all the circumstances of ordinary discourse, with its psychological, ethical, and social complexity. Many a conclusion inadequate from the perspective of philosophical consistency may be considered sufficiently well established to act on in a given situation. And the converse may also hold: one may have "sufficient grounds" for a conclusion but still need to select and express the arguments for it that will persuade a particular audience. We will see the difficulty of maintaining a clean distinction between rhetoric and logic as we examine Mill's examples.

Taxonomy

Mill's taxonomy of fallacies differs from that of other writers on the subject. To begin with, he does not discuss at all the troublesome *ad* fallacies, which, as contemporary commentators have pointed out, are often not fallacious at all. Instead, he identifies repeated patterns of inadequate reasoning that we employ in performing the mental operations of assuming, observing, generalizing, ratiocinating, and just being confused. When arguments go wrong, they do so for five possible reasons, and these produce Mill's taxonomy: first, we take some propositions for granted without subjecting them to any verification or support; these he calls *a priori* fallacies or fallacies of simple inspection. Second, if we do see the need for support and attempt to observe the evidence for the propositions we hold, it is possible to do so badly. These Mill calls fallacies of observation. Third, having observed, we can generalize from evidence, and again do so badly or incompetently; Mill calls these fallacies of generalization. Fourth, having come to generalizations, we can reason from them by constructing deductive chains or syllogisms, and that too can be done badly; Mill calls such errors in syllogistic reasoning fallacies of ratiocination. Finally, we can simply have a confused or muddled notion of what the evidence is and reason in an imprecise manner from it. This catchall category he labels fallacies of confusion, and it includes such standards as ambiguity, *petitio principii*, and *ignoratio elenchi*. This taxonomy possesses the virtue of logically completeness and Mill handles it with great flexibility, never insisting on the impermeability of categories. Mill's greatest original contributions to the theory of fallacy are, as we might expect from such a committed inductivist, his discussions of fallacies of observation and generalization. This is where Mill's originality as an inductive thinker shows; here, and throughout the Logic, he lays out the patterns of thinking that leads people to the acceptance (justifiable or unjustifiable) of premises that function as foundational elements in argumentation. Less original, the treatment of fallacies of ratiocination (or syllogistic fallacies) and the standard fallacies of confusion covers ground that has already been well discussed by other thinkers. The major problem with the taxonomy, in my view, is that it tries to focus on procedures of reasoning without linking them to the expression of arguments.

Fallacies of simple inspection

Under fallacies of simple inspection Mill includes not only "cases in which a proposition is believed and held for true, literally without any extrinsic evidence, either of specific experience or general reasoning, but those more frequent cases in which simple inspection creates a presumption in favour of a proposition ... creating a

predisposition to believe it on evidence which would be seen to be insufficient if no such presumption existed." (485) In other words, fallacies of simple inspection are not whole arguments, chains of inferences with premises and conclusions, but *a priori* assumptions that can serve as premises, sometimes unexpressed, for arguments built around them. Aware of the metaphysical question, "What are the propositions which may reasonably be received without proof?" (488), Mill brackets that issue, since consideration of it would require an extended philosophical discussion or precipitate the treatment of fallacy out of logic into the world of rhetorical contingency.

Even the examples Mill offers of fallacies of simple inspection suggest the inescapable rhetoricity of the notion of fallacy. Actually, what Mill calls *a priori* assumptions, Aristotle would call enthymemes, reasoning from the knowledge already held by the audience. Most fallacies of simple inspection are rhetorical enthymemes, acceptable only to the extent that the assumption about what can be believed without evidence is shared by speaker and audience. Arising from the unwarranted *a priori* assumption that "the same order must obtain among the objects in nature which obtains among our ideas of them," (489) many vulgar errors reflect a naive associationism. Mill cites as examples the belief in omens, the prohibition against speaking of the devil, and the belief that it is unlucky to speak of misfortune. In popular discourse, these beliefs are often expressed as maxims, that is, enthymemes whose premises are suppressed. Of course, enthymemes can be more or less good arguments, depending on the acceptability of the premises and the quality of the common wisdom they invoke. The strength of Mill's identification of such beliefs as fallacious is his identification of the pattern of common assumptions; its weakness is that the philosopher's confident identification of the assumption corrects the vulgar belief only for those who do not already hold it.

In addition to exposing popular superstitions and what passes for common wisdom, Mill takes on some philosophical assumptions that he considers unjustified, such as Descartes' inference that geometric figures really exist because they can be distinctly conceived, or, its opposite, the assumption that whatever is inconceivable must be nonexistent, such as the antipodes. He also identifies some common scientific misconceptions, such as the maxim that "a thing cannot act where it is not," which precludes belief in gravity, and the assumption that nature always acts by the simplest means, which has been taken to mean that the most familiar explanation or hypothesis must be the truest. He even goes so far as to identify as fallacious the principle of sufficient reason, the claim that nature does a particular thing because we see no reason why it should not—a principle articulated in the laws of inertia and the first law of motion. Mill sees these "laws" as circular; in his view "the real and only proof of the laws of motion, or of any other law of the universe, is experience." (497) He points out the *a priori* fallacy of assuming that causes resemble their effects, an assumption that accounts for practices in folk medicine like using turmeric to cure jaundice because it is yellow; in chemistry, assuming that the properties of an element resemble those of compounds; and in philosophy assuming that the mind can't act upon matter because the two have no common property.

All of the above examples of the fallacy of simple inspection are drawn from three distinct realms—popular superstition, science, and philosophy—and as *a priori* assumptions they all assume some conditions as simply given, not subject to question. What Mill has done, in rhetorical terms, is identified the common pattern of enthymemic argument. A rhetorical perspective might further point out that the proponents of such beliefs hold them with varying intensity: some take folk beliefs quite seriously, while others bow to them only casually (as in refusing to mention a no-hitter while it is in progress). Because of such differences in audience, degree of adherence, and what's at stake, it might be argued from a disciplinary perspective that *a priori* reasoning in science and philosophy differs significantly from the "vulgar errors" of folk belief. Moreover, Mill's account seems to blur differences between the *a priori* assumptions of science and those of philosophy. While the scientific

assumptions of one era will often strike succeeding eras as ridiculous, the philosophic enterprise may not be quite so progressivist as Mill's identification of "mistakes" suggests. His discussion of philosophy, like that of science and even of popular belief, assumes a straightforward intellectual meliorism: intellectual progress results in the gradual sloughing off of false beliefs, as we become increasingly free of error and superstition both in our commonly held beliefs and our disciplinary thinking. As a philosophical thinker Mill himself may not be exempt from the *a priorism* he identifies as fallacious in others.

In addition, despite the determination to exclude from discussion the motives for fallacy, Mill's discussions of his examples suggest that *a priori* fallacies of simple inspection are not just propositions held in a dialectical vacuum. As prejudices, presumptions antecedent to truth, they underlie arguments that he unhesitatingly labels as disingenuous. For instance, he points out that reasoning such as Descartes' appeal to the immutability of the Divine Nature is "nearly as common now as it was in his time, and does duty largely as a means of fencing off disagreeable conclusions." (505) In his framing of his discussion of fallacy Mill views the motives and effects of such an argument as separable from the reasons for its fallaciousness, but certainly he seems just as put out by it as Bentham does at the political fallacies he describes:

> But since in reality every one feels that nature is very far from perfect, the doctrine is never applied consistently. It furnishes an argument which (like many others of a similar character) people like to appeal to when it makes for their own side. Nobody is convinced by it, but each appears to think that it puts religion on his side of the question, and that it is a useful weapon of offence for wounding an adversary. (506)

As the above comment suggests, despite his avowed determination to exclude will, emotion, and sophistical contentiousness from his notion of fallacy, Mill's commentary on his examples turns contentious precisely when he recognizes complexities of motive that underlie the enthymemic structure of discursive give and take. Therefore it seems fair to conclude that in his discussion of fallacies of simple inspection Mill is neither himself free from *a priori* foundational assumptions nor able to isolate his evaluation of examples from the contaminant of speculation about human motivation.

Fallacies of Observation

Mill's largest category of fallacies includes inadequate proofs of three kinds: observation, generalization, and deduction. We will look first at fallacies of observation, which he subdivides into fallacies of non-observation (the failure to observe evidence that might be observed) and fallacies of mal-observation (observing evidence, but doing so badly). Like the *a priori* presumptions of the first category, fallacious observation is expressed not in deductive arguments containing procedural errors but in strongly held foundational premises, and the imputation of fallacy is subject to the same reminder about how enthymemes function in arguments. Again Mill pointedly excludes casual error as the cause of faulty observation: "It belongs not to our purpose to treat of non-observation as arising from casual inattention, from general slovenliness of mental habits, want of due practice in the use of observing faculties, or insufficient interest in the subject." (507) Again many of his examples of non-observation are drawn from the realms of popular belief and vulgar error: People (then and now) persist in believing in almanacs as forecasters, mainly because they choose to ignore all the forecasts of events that don't happen, preferring to focus on those that do. Similarly, people believe in sayings like "fortune favors fools," which gets accepted as a general truth because we expect fools to fail, so that whenever they succeed we take special notice. (This might be called the Forrest Gump phenomenon.) Casting a skeptical eye at common human

behavior, he points out that travelers almost always confirm the opinions with which they set out. Similarly, in a disciplinary genre, historians see only what is favorable to their preconceptions. Mill's identification of the widespread human tendency toward blithe non-observation is useful as a way of describing the common reasoning process underlying a variety of similar cases. People do indeed observe badly and selectively, and the charge of fallacy functions as an effective challenge to many widely held popular beliefs. However, the assumed beliefs that Mill identifies need not exist in a vacuum. In the case of disciplinary discourse, they may be both arrived at discursively and function discursively as premises for further arguments, and that is often more evident in scientific and philosophical beliefs than in general popular opinion.

Non-observation similar to that which lies behind popular beliefs also appears in scientific discourse. Mill points out that the anti-Copernicans' pre-conceived opinions prevented them from seeing what was before their eyes. They argued that the earth did not move, because if it did, they maintained, a ball let fall from the masthead of a ship would not reach the ground at the foot of it, but nearer to the stern. Mill notes that they assumed the truth of what they had never taken the trouble of observing: "The Copernicans would have silenced these objectors at once if they had tried dropping a ball from the mast-head, since they would have found that it does fall exactly at the foot, as the theory requires." (509) Similarly, phlogistic theory was believed due to non-observation of the gaseous products of combustion. It is relatively non-controversial to impute fallacy to outmoded scientific beliefs. Moving closer to contested medical theories of his own day, Mill points out the willingness in popular medical opinion to ascribe to particular medicines or to supernatural means medical cures that were really produced by regimen, rest, or amusement. Warming to his subject and extending his frame of reference to contemporary economic theory, he notes that fallacies of non-observation are rampant in the field of political economy, as in the argument that lavish expenditure encourages industry (the nineteenth-century version of trickle-down economics). This argument, he claims, overlooks the greater positive effects of investment, which are not so visible but more widespread. In the field of economics, Mill claims that the argument against free trade is a similar case of non-observation, because it overlooks complex indirect benefits of trade that are not so readily visible.

Thus Mill's examples of the fallacy of non-observation range from widely held generalizations about human behavior to discredited scientific beliefs to elaborate economic and political arguments. It may indeed be the case that, from Mill's perspective, all these arguments share the common quality of ignoring evidence, and therefore they can all be called fallacious. But the effects of imputing fallacy differ widely, depending on the degree of adherence with which beliefs are held. It would be difficult to get trickle-down economists and anti-free traders to accept the imputation of fallacy and to acknowledge the structural similarity between their arguments and those of the anti-Copernicans. The positions held by trickle-down economists and anti-free traders have been (and still are) defended by many experts and their political advocates precisely because what constitutes the observation of reliable evidence remains disputable both to the public and within disciplinary fields. To impute fallacy in the arguments of a disciplinary field or a political stance, then, is not so simple a matter as pointing out the failure to observe evidence. It is a rhetorical gesture designed to launch rather than to end an argument.

In addition to believing things on no evidence at all (committing fallacies of non-observation), people commit fallacies of mal-observation; that is, they hold wrong beliefs because they have observed poorly. Under this category of seeing things but seeing them wrong, Mill includes all cases where people mistake an inference for the direct evidence of the senses. Thus people believe that we see the sun rise and set and assume that the sun rather than the earth moves; eye-witness accounts are frequently mistaken, and—here's Mill the religious debunker—"many a deluded visionary has actually believed he was directly inspired from heaven." (504) Although Mill claims to be excluding all psychological and ethical causes—casual inattention, general slovenliness of mental habits, carelessness, insufficient interest, inexperience—for non- or mal-observations, such motivations

sneak right back into his descriptions of every example of fallacious observation. The purported function of Mill's circumscribed theory of logical fallacy is simply to identify the inferential process that has produced such wrong beliefs. But whenever fallacy is defined simply as wrong belief, the space is left for more rhetorically oriented explanations that suggest their sources, along with the disciplinary and psychological conditions that give rise to them and their acceptance by various audiences. If we fail to observe or observe badly, we do so for reasons, and it is practically impossible to keep these reasons out of the descriptions of the result. Here a more rhetorical perspective might do more to account for skewed observation. Bacon, for instance, identifies Idols of various kinds, and Burke's notions of "terministic screens" or "trained incapacities" helps account for their acceptance. Linguists point out the ways in which the frames or schema we carry in our heads affect what we are able to see or process. Studies in the rhetoric of the disciplines are very interested in such "wrong opinions" as the assumptions of particular discourse communities.

Fallacies of generalization

Mill's chapter on fallacies of generalization is perhaps the most impressive in his entire treatment of the subject; it is certainly his most extensive, and its description of the ways in which we come to hold generalizations in both philosophical and public discourse stands up well. Again, he begins with his careful boxing-in of the definition of fallacy. When "the rules are known and kept in view, but a casual lapse committed in the application of them, this is a blunder, not a fallacy." For fallacy, the error "must be committed on principle; there must lie in it some erroneous general conception of the inductive process; the legitimate mode of drawing conclusions from observation and experiment must be fundamentally misconceived." (514) For Mill fallacy involves not simply holding an incorrect proposition or premise but doing so *on principle*, because of an erroneous conception of how one reasons. Although such precision of focus facilitates clarity, it raises the issue of determining in what circumstances the "legitimate mode" needs to be employed and how one distinguishes between blunders and genuine fallacies (and, for that matter, why one would need to). While his thoroughly circumscribed definition allows him to focus on fallacy as a philosophically significant phenomenon, his illustrative examples suggest that arguers in many fields and many kinds of circumstances commit similar kinds of errors that vary in severity and corrigibility.

Under this large category of fallacies of generalization, Mill identifies certain kinds of generalizations as necessarily groundless: all inferences from the order on earth to that in remote parts of the universe; all universal negatives; all generalizations that resolve all things into one element. He calls all arguments proceeding from such assumptions fallacious. This category of faulty generalization takes in the assumptions of some major philosophical, social, and scientific theories; clearly, Mill is mainly interested here in arguments addressed to what Perelman would call a universal audience. These are all arguments that aim at gaining the adherence of all rational beings, "the agreement of an audience which should be universal, since, for legitimate reasons, we need not take into consideration those which are not part of it." (31) Where Mill differs from Perelman and Olbrechts-Tyteca is in his insistence that the examples he cites of fallacy be held to a strict and timeless standard of evidence rather than the mutable appeal to "what everyone knows."

According to Mill, one of the main ways in which faulty generalizations occur is that people confuse the philosophical principles of causality with empirical inductive generalizations. Mill points out the inadequacy of what he calls "the natural induction of uninquiring minds," (516) noting that "simple enumeration is still the common and received method of induction in whatever relates to man and society." Thus arise such widely held

erroneous beliefs as the assumption that Negroes cannot be civilized the same way whites are because they have not been; that women are inferior to men because they always have been; that society cannot prosper without some institution such as slavery, rank, or a priesthood, just because it has always had this institution; that philosophers are unfit for business because of the very nature of their discipline. Here Mill also includes generalizations about man and society that assume "that human nature and society will forever revolve in the same orbit." (518) At this point he even turns his analysis on his own meliorism, acknowledging that "all generalizations which affirm that mankind have a tendency to grow better or worse ... are in reality true or false according to times and circumstances."

Mill describes all of these generalizations as fallacious because they are inductions without elimination. They are methodologically inadequate because they involve no comparisons of instances, no checking on facts. At best, they deserve the status of empirical laws, "holding good within the limits of space and time by which the particular observations that suggested the generalisations were bounded," (517) and even at that, they are subject to modification and correction. Here we see at work the mind of Mill the social constructionist, the cautious believer in corrigibility and falsifiability, even of his own theories. Consistent with his notion of fallacy as false belief resulting in particularly *philosophical* error, he has identified the mistaken assumptions behind many significant arguments of his day (and of days preceding and following his). However, it may be argued that while the assumptions that Mill considers to be empirical and thus subject to modification may be held by some thinkers as philosophical assumptions, they may be embraced by others as casual blunders. Some thinkers have supported (and, indeed, still support) such beliefs on principle and thus according to Mill's rigorous standards have earned the accusation of fallacy. Others may assume them out of bias, indifference, or carelessness—precisely the attitudes excluded from consideration as affecting fallacy. Still others may consider belief sufficiently certain for the purposes of action in particular circumstances. Is the accusation of fallacy then merited only by the philosophically thoughtful but mistaken? Does the disciplinary standard of philosophical adequacy extend to the public policy arguments that follow from such premises? Is the imputation of fallacy, though directed by Mill only at philosophical proponents who reason from inadequate principles, applicable to less methodologically self-conscious adherents who may have other reasons for adhering to such premises?

Under the category of faulty generalizations, Mill includes instances of the *post hoc* fallacy, which he describes as a confusion of empirical and causal laws. Such errors, in his view, may occur *a posteriori*, as in the argument that the national debt is a cause of national prosperity or the argument for the excellence of any institution inferred from the fact that the nation has prospered under it. Such inferences identify one phenomenon as the cause of another without sufficient empirical justification. Or the fallacy of faulty generalization can occur *a priori*, as in medical theories holding that all disease is caused by phenomena such as "viscisidy in the blood" (519) or their political equivalent, such as doctrines ascribing absolute goodness to particular forms of government or social arrangements. These are examples of what Mill calls "false theory," conclusions that overrate the importance of one possible cause. As Pinto (306) points out, Mill's examples of the *post hoc* fallacy differ from those of other theorists because he defines it not so much as the assumption of causal relationship because of time sequence as the unjustified movement from a particular to a general—thus their taxonomical slot as a kind of fallacy of generalization. Whether *a priori* or *a posteriori*, the fallacy lies in leaping too quickly to a causal generalization. But in all cases the error seems to be as much in the peremptoriness of the generalization as in the attribution of causality based on temporal sequence. What is "wrong" is the over-generalized, over-simplified conclusion, not wholly, clearly, or simply the attempt to causally connect the past to the present and future.

Mill's final group of examples in this chapter on faulty generalizations fall under the category of false analogies, which he defines weak comparisons that do "not even simulate a complete and conclusive induction, but

consist[s] in the misapplication of an argument which is at best only admissible as an inconclusive presumption where real proof is unattainable" (520) In his view arguments using extended metaphors to explain phenomena often overrate their probative force. Mill does, however, acknowledge that not all analogies are fallacious; some are apt and genuinely enlightening. But the worst situation occurs "when resemblance in one point is inferred from resemblance in another point, though there is not only no evidence to connect the two circumstances by way of causation, but the evidence tends positively to disconnect them." (521) As an example of faulty analogy Mill cites the argument that since paternal government in a family works well, "despotic government in a state will work well". Mill calls this fallacious because of what he sees as essential differences between the two elements of the comparison: the effective government of a family depends on qualities not present in the state, such as the affection of the parent for the offspring and the parent's superiority in wisdom. Similarly Mill labels as false the analogy at the basis of the argument that bodies politic have youth, maturity, old age, and death. This analogy fails, Mill says, because we die of natural causes but political bodies die of "disease or violent death; they have no old age." (522)

Mill is certainly shrewd in pointing out that in arguments drawn from analogies and metaphors, the applicability of the comparison is often the very issue at stake. However, his analysis acknowledges no interplay between the probative and explanatory force of analogy. Mill's position is that an apt metaphor cannot prove, though it may suggest the proof; for him a metaphor is not an argument, only an "assertion that an argument exists." (525) In his view metaphors cannot prove because they assume the proposition which they are brought in to prove, and they are useful only to the extent that they aid the apprehension of it. Thus Mill regards metaphors as rhetorical (in his sense of the term) rather than probative, as elements that aid in presentation rather than proof, a view consistent with his wholly presentational view of rhetoric. However, this approach does not account for the complex, often indeterminate relationship between the invention and expression of an argument. An analogy can be the seed of invention for an argument, or it can be used to explain the less known in terms of the better known, or it can even help the arguer see points of comparison that would not have been obvious without the prod of comparison. It is not necessarily "mere rhetoric," only a technique of presentation. A more rhetorical perspective might even reverse Mill's emphasis: metaphors and analogies can be considered more or less good arguments (not bad ones) in varying degrees, good to the extent that they can be developed, inadequate at the point at which they break down. In Mill's examples, his disagreement is located at exactly the point he thinks the resemblance breaks down. Although all analogies can be refuted because there is always a point where the similarity between the elements being compared ends, refutability need not be taken as a sign of fallaciousness.

Fallacies of ratiocination

The fourth category of fallacy that Mill takes up is fallacies of ratiocination, that is, errors in the reasoning process. Here his treatment is less original and he retreads ground covered by earlier treatises, notably Whately's and DeMorgan's, on the ways in which the relationships between propositions can go wrong, including both faulty syllogisms and the illegitimate conversion of propositions. But he does contribute an important observation to the theory of fallacy. As we might expect from an inductivist, Mill expresses a good deal of skepticism about the significance of fallacies in deductive syllogistic reasoning. Though he acknowledges that following the rules of the syllogism constitutes a perfect protection against various kinds of procedural errors, Mill argues that such violations are uncommon precisely because they are so easily recognized. He further maintains that because people do not normally cast their arguments into syllogisms, they often will not easily accept a syllogistic reduction of their arguments. In other words, the very imputation of fallacy can precipitate an argument about

how one's argument is to be understood, and (by implication) the critic may not have sole claim to the authority to determine how an argument is to be summarized. Pushing the issue further, the question becomes, if people do not cast their arguments in syllogistic form, what are the rules of deductive logic for? Mill defends their utility as a kind of mental checklist, a way of revealing what one is compelled to defend in preparation for making an argument. This discussion emphasizes Mill's mentalistic, rationalistic perspective on argumentation.

He notes, for instance, that fallacies connected with the conversion of propositions (all A are B; therefore all B are A) are very common, though "committed, like many other fallacies, oftener in the silence of thought than in express words." (526) Similarly, of the improper conversion of a hypothetical (if A, then B; B, therefore A), he writes that "hardly anything is more common than for people in their private thoughts to draw this inference." (525) But when he gets the chance to introduce his favorite kinds of examples of these fallacies, Mill seems to find it hard to resist sliding into the role of Benthamite debunker of widely accepted public arguments for political, social, and religious conservatism. He points out, for instance, the fallacy of people accepting philosophical systems because they lend support to religion, morality, or politics, on the grounds that leading to what is deemed a sound conclusion seems to be a presumption in favor of an idea. His choice of example suggests that fallacy is indistinguishable from the wishful thinking of supporters of preferred social and political positions.

Turning to standard fallacies like the *secundum quid*, Mill offers as an example Adam Smith's Mercantile Theory, which argues that since what brings in money enriches, therefore money should be attracted into a country and kept there. He considers Smith's argument fallacious because it ignores the fact that money enriches not by simply existing in a country but as a measure of purchasing power. Similarly, he points out that the argument that since an individual is the best judge of his own pecuniary interest, government should not interfere in economics is only true *secundum quid*. According to Mill, people will behave responsibly—i.e., they will not take more of an available good for themselves than required—only under the condition that the responsible conduct of others can be guaranteed, and such conduct can be controlled only by government regulation. Along the same lines, he acknowledges that arguments that wages or prices or interest rates always find their own level may be true, but they are true only *secundum quid,* under certain conditions. In such arguments, he points out, the condition of *time* is too often ignored; the fact that wages will *eventually* find their level does not mean that they are at their level *now*.

In the above examples Mill's accusations of fallacy raise the question about the conditions under which arguments for political and economic positions opposed to his own hold as opposed to the conditions under which they can be refuted. Although he is confident in the imputation of fallacy, it is not at all obvious that his opponents would accept his "corrections" of their fallacious reasoning. All of the examples of *secundum quid* fallacies occur in political and economic arguments that are still being defended by their adherents. Undoubtedly, they would continue (indeed, have continued) to argue about the relevance or existence of the particular conditions under challenge.

Fallacies of confusion

The final section of Mill's treatment of fallacy deals with less formal errors, which he calls fallacies of confusion, where "the source of error is not so much a false estimate of the probative force of known evidence, as an indistinct, indefinite, and fluctuating conception of what the evidence is." (530) Here, as we might expect, he comes closest to dealing with the actual discourse of controversy. He distinguishes three varieties of fallacies of confusion: first, reasonings in which the source of error is the ambiguity of terms, in which the premises look as if

they support the conclusion, but upon close examination can be seen not to because the meaning of a crucial term shifts; second, fallacies of begging the question, the *petitio principii*, including the more common reasoning in a circle; and third, fallacies of irrelevant conclusions, the *ignoratio elenchi*, where the conclusion is irrelevant to the premises. All of this discussion is heavily indebted to Whately; indeed, Mill quotes much of Whately's discussion at length. He does, however, contribute some examples of his own, drawn from the literature of philosophical controversy, such as the logical puzzle of Achilles and the Tortoise, the solution to which, he says, turns on an ambiguity in the term "infinite," confusing the infinitely divisible with the infinite in extension. Thus, Mill explains, "an unlimited number of subdivisions may be made of that which is itself limited .... to pass through this finite space requires a time which is infinitely divisible, but not an infinite time." (535) Here in a discipline that insists on clear definitions as a basis for argument, Mill's analysis of fallacy is most cogent. Furthermore, perhaps because he is retreading familiar ground, Mill seems here most pulled into criticizing the actual discourse of public controversy rather than identifying mental errors committed prior to discursive engagement. The emphasis on the actual discourse of argumentation is inescapable because he is considering the ways in which form and expression contribute to the confusion created by an argument.

Other examples evoke controversies and issues of special interest to contemporary readers, such as Mill's explication of the frequently occurring ambiguity in the definition of Theory. In "the proper sense of the word" Mill says that theory refers to an "explanation of practice," "the completed result of philosophical induction from experience." But "in another and a more vulgar sense, theory means any mere fiction of the imagination, endeavouring to conceive how a thing may possibly have been produced, instead of examining how it was produced." As in the tortoise example, it is the disciplinary precision of Mill's definition that allows for his certainty. If everyone agreed with philosophers on what "Theory" was, there would be no argument. Undoubtedly, however, proponents of the "vulgar sense" of theory would dispute his characterization and not accept his judgment of their practice and use of the term as fallacious.

In a similar case, this one more related to legal than to academic discourse, Mill's remarks on the "right" of free speech point to an ambiguity he discerns in the use of the term, resulting in a confusion frequently occurring even today in arguments defending controversial expression. Mill's analysis attempts to clarify the debate over controversial expression defended as a right of free speech by its proponents and attacked as irresponsible by others:

Speaking morally, you are said to have a right to do a thing, if all persons are morally bound not to hinder you from doing it. But in another sense, to have a right to do a thing is the opposite of having *no* right to do it, i.e. of being under a moral obligation to forbear doing it.... [But] the right which you have by virtue of a duty incumbent upon other persons is obviously quite a different thing from a right consisting in the absence of any duty incumbent upon yourself. Yet the two things are perpetually confounded. Thus a man will say he has a right to publish his opinions, which may be true in this sense, that it would be a breach of duty in any other person to interfere and prevent the publication; but he assumes therefore upon that in publishing his opinions he himself violates no duty, which may either be true or false. (536)

The argument turns on the shifting boundaries between the definition of one person's rights and concomitant or conflicting duties. But the person who claims the right to do something will undoubtedly not accept someone else's definition of duty. Thus the argument continues and the person accused of fallacy will persist in contesting the ground that lies between right and duty. Mill's attribution of fallacy holds only for those who already share his philosophical orientation; even within his field there may be disagreement.

In explaining the fallacy of *petitio principii*, Mill agrees with Whately that it is most often likely to occur in sustained passages where the tautology is expressed in language that obscures the relationship between premises and conclusion. In philosophical controversy, for example, he points out how the terms Nature and Essence are used as instruments of fallacy: "Some particular properties of a thing are selected, more or less arbitrarily, to be termed its nature or essence; and when this has been done, these properties are supposed to be invested with a kind of indefeasibleness, to have become paramount to all the other properties of the thing, and incapable of being prevailed over or counteracted by them." (530) Such an argument may indeed occur as a result of the arguer's confusion and result in the audience's confusion, and Mill shrewdly identifies the potential misleadingness of such easy slippage between assumption and conclusion. However, the fact that the alleged fallacy occurs in a sustained passage may also mean that the arguer might contest the analyst's casting of the argument into the more condensed and revealing form, thus disputing the imputation of fallacy. The problem, then, is similar to what Mill says about syllogisms: if natural reasoning seldom appears in the form in which error is easy to recognize, the reasoner is quite likely to dispute any interpretive reformatting of the argument. As Mill points out, "A proposition would not be admitted by any person in his senses as a corollary from itself, unless it were expressed in language which made it seem different." (538) What only *seems* different to one person might actually *be* different to another. When the recognition of fallacy depends upon the format in which the argument is expressed, we are no longer dealing with purely mental error but with rhetoric. In this case, what the notion of fallacy does is facilitate a mental check.

Conclusion

Mill's treatment of fallacy has much to recommend it along with some slippages and inconsistencies. On the positive side, he works from a coherent and articulate philosophical perspective. More than the approaches of his predecessors Bentham and Whately, and his contemporary DeMorgan, his is consistently inductive, concentrating on distinguishing between adequate and inadequate ways of supporting premises rather than on procedural errors in linking premises. Focussing firmly on the ways in which evidence is understood, Mill is interested in what we come to believe and what goes wrong in our coming to believe it. He is concerned with how we reach generalizations, whether or not we articulate them in our actual arguments. But at some point the mentalistic focus becomes a weakness. For one thing, when examining actual discourse it is difficult to maintain a clear distinction between inductive and deductive argument. Although Mill dismisses as uncommon errors made in the process of deduction, similar errors occur in apparently inductive reasonings, which must also depend on usually unarticulated assumptions, whether of relevance, typicality, or sufficiency. If, for instance, I conclude that my geraniums are not blooming well this summer because of excessive rain, that looks like a causal argument based on inductive generalization: my geraniums bloomed brilliantly two summers ago when it was dry, but the past two summers have been rainy and my geraniums have faltered. Certainly the evidence for my conclusion may be evaluated on grounds of its relevance, sufficiency, or typicality. I needed to assume that the amount of rainfall was relevant to the growth of my flowers (an assumption that most gardeners would accept), that the amount of rainfall is a factor sufficient to bring about the success or failure of my geraniums (assuming that nothing else important varied, like change in the composition of my soil, the time I put in my plants, the variety of geranium I planted, my habits of fertilizing, or the attacks of marauding cats, deer, and rabbits on my flower bed), and that my experience of three years is typical enough to warrant generalization. If my argument fails those tests, it might be called an instance of the *post hoc* fallacy; if it passes them, it will be seen as reasonable. Thus, depending on where one places one's formal template, the distinction between deductive and inductive argument blurs: deductive arguments assume that the supportability of their premises is achieved by some other means, but

the acceptability of premises inevitably rests on assumptions of relevance, sufficiency, and typicality.

The second major strength of Mill's treatment of fallacy is its identification of patterns of inference and inspection. The ability to abstract formal patterns characterizes intellectual disciplines and creates their special vocabularies. To recognize a fallacy, then, is to recognize a pattern of reasoning that applies to many kinds of subject matter across many fields, ranging from the highly philosophical to the level of folk beliefs. One consequence is that you can only identify fallacies clearly by narrowly circumscribing what your labels refer to. But the actual reasoning and the arguments that people make do not stay still for labelling and do not always fall into easily recognizable forms. As we have seen, it is difficult to maintain a focus on reasoning patterns considered apart from discursive practice, and once we start looking at discursive practice, social, ethical, motivational, and disciplinary elements enter the picture and affect the evaluation of reasoning. That is exactly what happens in Mill's account. The further one reads in it, the more it becomes clear that despite the disclaimers, he is looking at and evaluating discursive practice rather than the reasoning involved in self-persuasion. Nor is his analysis exempt from the charge of autophagia. Although he exposes the unwarranted leaps to conclusions made by others, he can only ground his evaluations in empirical laws equally probabilistic as those of his opponents.

My point, however, is not to argue the non-existence of fallacies. To the extent that people make arguments that can be evaluated as relatively good or bad according to criteria that are to some extent at least definable and generalizable from one field to another, people can be said to commit fallacies. The names of fallacies, originating unsystematically from so many different sources, do indeed describe patterns of mistakes, but we also need to remember that these repeated patterns are the residue of many different causes and motives, impossible to account for by formal analysis. The term "fallacy" is a catchall that has been used by many philosophers to describe a number of different kinds of phenomena, including deliberate deception, the disciplinary practices of forensic and deliberative discourse, corrigible mistakes, confusions, verbal ambiguities, inductive errors, unjustified assumptions, unexamined presumptions, unwarranted inferences, commonly held preconceptions, ideological prejudices, morally suspect argumentative tactics, rationalizations, arguments directed at particular audiences, etc. All of these "mistakes" are intertwined in our thinking and our discourse and they make arguments less convincing, more probabilistic. Book V of Mill's *System of Logic* goes a long way toward identifying and describing many of these patterns. It must be remembered, however, that the charge of fallacy is the beginning not the end of argument; it is a disputable claim. As discussion of so many of Mill's examples reveals, the charge is often contestable, and reasoning that has been criticized can also be defended. The charge of fallacy, however supportable, is not the ultimate trump card but a move in an ongoing game.

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