

## The Feminist Critique [Repudiation] of Logic

by Noretta Koertge

Introduction: Logic is the systematic study of patterns of correct inference. The first treatise on logic is Aristotle's *Prior Analytics*, written around 350 B.C. and there are remarkable similarities between the way he presented his theory of valid arguments and the way it is still taught today. He analyzes the form of various inferences and then illustrates them with concrete examples. He begins with very simple cases:

"If no B is A, neither can any A be B... e.g. if no pleasure is good, no good will be pleasure."

"If some B is not A, it does not follow that some A is not B. By way of illustration let B stand for animal and A for man: not every animal is a man, but every man is an animal." (Aristotle, p. 5)

Aristotle's exposition of syllogistic reasoning was the core of what came to be called the *Organon*, the instrument of demonstrative reasoning, and Logic was the [most honored?] member of the trivium, which functioned as the "core curriculum" throughout the Middle Ages.

Today students are still strongly encouraged to take logic--at I.U. beginning logic is required for undergraduates majoring in Nursing, Physical Therapy and Social Work. Irving Copi, author of a series of very popular logic textbooks states the traditional rationale:

"...the study of logic, especially symbolic logic, like the study of any other exact science, will tend to increase proficiency in reasoning. And...the study of logic will give students certain techniques for testing the validity of all arguments, including their own." (Copi, *Symbolic Logic*, p. 5)

As was the case with claims made about Latin, it is very difficult to provide evidence for the salutary influence of the study of logic on human reasoning in ordinary life situations, but it clearly does help students do well on the GraduateSord Exam and the Law School Admission Test. For that reason alone one might well expect feminists to urge women students to take logic and to point out that it is not just women students who find logic difficult. A responsible academic advisor should actively encourage those who lack confidence to stick with courses like logic and mathematics instead of falling prey to old stereotypes about women lacking the aptitude for abstract, linear thinking. Unfortunately, the predominant feminist response has been to attack logic and other traditional canons of rationality as sexist. We will look at two separate lines of attack, one dealing with the way logic is taught, the other directed at the discipline itself.

Sexist Syllogisms, Quantifiers and Quips: Logic textbooks are full of exercises which give the student practice in translating strings of ordinary English sentences into logical notation and then appraising the formal correctness of the inferences they comprise. Many of the examples are now classics--who has not heard the syllogism about Socrates and his mortality? But there is also a tradition among textwriters of generating witty examples which are intended to keep students awake as they work their way through Venn diagrams, truth tables or natural deduction schemata. So the exercises in Lewis

Carroll's famous logic book include whimsical sentences such as these:

No lizard needs a hairbrush. (p. 130)

Some vain persons are not professors. (p. 131)

Guinea-pigs are hopelessly ignorant of music. (p. 115)

A prudent man shuns hyenas. (p. 109)

My dreams are all about Bath-buns. (p. 120)

As the last example about Bath buns (British breakfast rolls) illustrates, these little student exercises provide us with glimpses of both the author's psychology and contemporary popular culture. Thus Carroll's book also contains:

All Britons are brave. (p. 102)

No niggers are white. (p. 103)

Some Jews are rich. (p. 140)

No Gentiles say "shpoonj". (p. 112)

All uneducated people are shallow. (p. 150)

No photograph of a lady ever fails to make her simper or scowl. (p. 101)

A good husband is always giving his wife new dresses. (p. 121)

One is immediately struck by the number of references to Jews in Carroll's exercises. (The list above is by no means complete.) Post-World War II American texts also reflect the concerns of the time, but now gender roles are a major topic of interest. Copi's exercises include:

A communist is either a fool or a knave. (Symb. p. 77)

The United Nations will become more responsible or there will be a third world war. (Symb., p. 11)

If any husband is unsuccessful then if some wives are ambitious he will be unhappy. (Symb., p. 89)

All members are both officers and gentlemen. (Symb., p. 77)

Whoso findeth a wife findeth a good thing. (Symb., p. 71)

All popular girls are good conversationalists. (Intro., p. 159)

All successful executives are intelligent men. (Intro., p. 134)

All tenors are either overweight or effeminate. (Symb., p. 83)

A similar pattern is found in other well respected books of the period. Women or girls do not figure at all in most of the exercises and when they do appear they are almost always in passive, trivial or demeaning roles:

Single women are decorous only if they are chaperoned. (Kalish, p. 98)

Women without husbands are unhappy unless they have paramours. (Kalish, p. 98)

The only sophomores who date Betty are those who like Greek. (Suppes, p. 56)

Mary dates only boys who own cars. (Suppes, p. 62)

Women are wonderful. (Suppes, p. 107)

Simone de Beauvoir is not a great writer. (Suppes, p. 107)

If either red-heads are lovely or blondes do not have freckles, then logic is confusing. (Suppes, p. 18)

There is no question that the exercises employed in these logic books reinforced traditional sexual stereotypes. Whether this fact played a significant role in deterring women from liking logic is much less clear. As the last example above reminds us, many students, male and female, find logic confusing, boring or difficult. What we can conclude, however, is that at this moment in time, thanks to the success of the women's movement, students are now sensitized to gender stereotypes and find sentences such as "every girl loves a sailor" every bit as inappropriate as Lewis Carroll's exercises about Jews with long beards. And more recent books, such as the 5th edition of Kahane's *Logic and Philosophy* portray women and men in a wider variety of roles:

Art watched "General Hospital", but Betsy didn't. (p. 33)

And in Kahane's dialogue about the Liar's Paradox it is Bonny who says "I know",

and provides the proof while Charlie says things like, "Maybe yes, maybe no" and "I

don't know why." (p. 193)

I wish I could end the story of the feminist critique of logic on this happy note. Unfortunately, however, some feminists have claimed that not just the homework exercises but the very enterprise of characterizing the formal structure of logical inference cannot be separated from sexism, racism, and totalitarianism. And in her new book, *Words of Power: A Feminist Reading of the History of Logic*, Nye concludes that while men are master of logic, women are more inclined to be masters [pic] of reading (p. 184). If Nye is right, women students would be well-advised to stay away from logic classes. The skills that logic purports to teach are socially deleterious and thank goodness women have little aptitude from them. But how good are the arguments which she and other radical critics provide? Let us both read them and *evaluate* the correctness of their reasoning.

Is Logic Inherently Repressive? [or Nye's Ad Hominem Attack]: Conflict between rationalists and romantics, those who would rely on reason and those who would privilege feelings, predate feminism, but feminists have added some new arguments and lots of new anger to the debate. Nye's *Words of Power*, published in Routledge's *Thinking Gender* series, provides a good example of the radical feminist critique. Because it is more clearly written and argued than most (Nye has not entirely abandoned her traditional training!), it is worth examining in some detail.

Nye begins with a story about the feelings she had in her logic class, how there was only one other woman in her class, how she was too unsure of herself to raise her hand in class, and how difficult it was to think in the way required. When confronted with the example, "Jones ate fish with ice cream and died", Nye, who had come to philosophy from literature, finds her mind wandering off into speculation about why Jones ate such a bizarre dish and why death was the consequence. The difficulty she experienced in representing the structure of the sentence with p's and q's raised a

troubling question in Nye's mind:

"Is it because I, as a woman, had a different kind of mind, incapable of abstraction and therefore of theorizing, [sic] is it because I was too 'emotional'?" (Nye, p. 2)

Many women have had such doubts. The liberal feminist reply is an analysis of how logical pedagogical styles as well as societal gender stereotypes make women feel alienated from logic. Nye's response is to put the shoe of blame on the other foot. She argues that given its historical development from the time of the Greeks, logic as we know it today, is not only alienated from women but also has been and continues to be a weapon of oppression.

Nye's first complaint is a familiar one to logic teachers--by requiring that sentences be formalized, logicians strips away nuances and metaphorical meanings. As Nye puts it:

"The philosopher who combs the tangles from language must also be a butcher who trims away the fleshy fat of ordinary talk to leave the bare bones of truth." (Nye, p. 33)

Nye believes that training in logic makes us focus too much on *what* is said instead of on *who* said it or *why*. As an example she cites the success of the Willie Horton ad in the Bush-Dukakis campaign. Nye believes that listeners behaved too much like logicians in their processing of the commercials; i.e., they concentrated too much on the arguments about parole policies and too little on the emotional impact of the pictures [Needless to say, a logician would immediately point out the existence of what are technically called "hidden lemmas," (unstated assumptions) in the Willie Horton argument and conclude that the listeners were not being logical enough!]

Nye's second objection is directed at Aristotle's Law of the Excluded Middle, a favorite target of feminists who see it as the basis of patriarchal dualistic thinking. The law of excluded middle simply says that everything is either A or not-A. It would be a contradiction to say of something that it is at once A and not-A. But Nye argues that this logic does not apply to "ambiguous bodily individuals who so often both are and are not what we desire of them." (Nye, p. 51)

Many lay criticisms of the law of excluded middle are based on a crude confusion between contraries and contradictories. The law does *not* claim that everything is either black or white and that there are no shades of gray. What it *does* say is that everything is either black or not-black, white or not-white, gray or not-gray. Aristotle's logic does not rule out the possibility of hermaphrodites, lukewarm baths, or wars which end with no victor.

But logicians themselves have had many interesting discussions of all of Aristotle's laws of negation. Some are worried about the proper analysis of intrinsically vague terms, such as *city* (How big must a town be before it counts as a city?) and have developed a formal analysis in terms of what are called "fuzzy sets". Others have resisted the idea that every sentence is either true or false and have experimented with so-called "three-valued logics". Philosophers of science have tried to develop a measure of "verisimilitude" which would permit us to say of two false sentences that one has a higher truth content than the other. Logic has more resources and more flexibility than are dreamt of in most feminist philosophy.

We now come to Nye's original criticism of logic, one based on an unusual reading of its history, starting with the Greeks, progressing through the Middle Ages, and then jumping to the early 20th century. Nye proudly owns up to committing the genetic fallacy and arguing *ad hominem* (Nye, p. 174)

since she believes that the historical context in which a theory develops and the character of the person who originates it *are* relevant to the evaluation of the truth of that view. [The logician's response I suppose would be that such historical and psychological factors might well be relevant to our understanding of *what* the person was trying to say, but is totally irrelevant to whether the view is well argued.]

So when Nye describes Aristotle's syllogistic, she also describes his theory of reproduction according to which the active male semen impresses its form on passive female matter and his doctrine of the "natural slave". We learn not only of Abelard's struggle to reconcile Stoic logic with Aristotelianism but also of his dialectical assault on Heloise. And it is claimed (I confess I couldn't follow the argument) that the racist sentiments in Frege's private diary are somehow relevant to his approach to mathematical logic.

Nye finds even more damning the uses to which logic was put. Thus, she claims, as logical discourse came to be admired in Hellenic law courts or public fora, those who did not follow the prescribed modes were disenfranchised:

"Logic rendered them all speechless, unable to voice their reservations and scruples, unable to validate or refute what had been said from their own experiences. And it was this dazzlement and this silencing that logic was *meant* to create." (Nye, p. 79, *my italics*)

Although Abelard listed an enormous number of inconsistencies within medieval theology in his controversial *Sic et Non*, in the end this only served to strengthen Christian dogma and the power of the Church:

"Logic could be used to make theology a self-consistent body of forced belief, it could rationalize the conflicting ordinances of canon law into the decree of a universal Church, and it could order an effective system of administration over diverse social orders based on codified canon law." (Nye, p. 94)

Nye's list of the atrocities aided and abetted by logic also includes Protestant witch hunts, "The renewed Protestant campaign against witches was expressed in a fundamentalist logic" (Nye, p. 119)

and functionalist sociology:

"With the discipline of functionalist logic, the institutions within which words have meaning are preserved, structured by economic and emotional inequality, coherent with a culture that plays and replays scenes of rape and violence against women." (Nye, p. 150).

The book culminates by positing a link between Frege, a giant of 20th c. logic,

and Hitler:

"Hitler...guided by sentiments not unlike the ones expressed in Frege's diary, worked out the master-

logic of National Socialism. ...National Socialism thought like Frege's, did not concern itself with empirical content. ...No personal experience could negate [its] body of truth. The applications of logic to action that Frege had promised came readily to hand. If Jews are a mongrel race, they must be exterminated. 'A thought like a hammer' [Frege's phrase] demanded instant obedience to the dictates of logic." (Nye, p. 169)

Nye's feminist reading of the history of logic ends with these words: "Logic in its final perfection is insane." (Nye, p. 171).

Conclusion: It will be difficult for male scholars to reply to Nye's writings. If they say the history is wrong, she will answer:

"The point of these readings...was to take up the words that have fallen from logician's mouths and reshape them...shaping them into a response that might wound more painfully than refutation." (Nye, p. 176)

If they claim that she equivocates in her use of the term "logic", that it is insane to pretend that *Principia Mathematica* and *Mein Kampf* are both logic books in the same sense of the term [cf. Merrill's comments], she will reply that she challenges the traditional rules of discourse and refuses its pretensions to autonomy. [cf., Nye, p. 176]

If one asks whether she isn't overreacting a bit, whether she didn't find at least some liberating moments in two thousand years of intellectual endeavor, she will reply that "as I read I saw little to pity or admire" and she was determined to avoid "the old trap, an attentive listening woman who understands all and forgive all." [Nye, p. 175]

Others may even grant that logicians in the past didn't do "the right thing", but ask, why couldn't there be "a politically correct...nonpoisonous logic that philosophers can practice in their writings and teach in critical thinking courses?" (Nye attributes the question to Don Levi, Nye, ms., p. 4). But Nye is dubious: "My question is whether logic even in its current more modest analytic form--a study of what counts as a reason--even when supplemented within [sic] interpretative readings, doesn't keep some of its poison." [Nye, ms., p. 4]

But perhaps a feminist could answer Nye. Perhaps a feminist could make the practical argument that in today's academy, logic and related abstract disciplines, are prerequisites for any number of fulfilling and important careers, such as nursing, medicine, economics, biochemistry, law, and computer science. Logic, math, and set theory serve as gatekeepers because many students, not just women, find them difficult. To tell a young woman to resist logic because it is a tool of domination and will poison her mind is to put yet another barrier in her path. Although the Hippocratic doctors could not always live up to it, their injunction to "At least do no harm" has much to commend it. Perhaps radical feminists might be prevailed upon to "at least do no harm to women" for it is young women who will most suffer from a repudiation of logic and critical thinking.

The question of the historical use and misuse of the tools of logical analysis and inference is an interesting and legitimate one and I found much of what Nye said about Greek and Medieval law thought provoking. But let us not omit the liberating moments in history. Let us also trace the connections between John Stuart Mill's *System of Logic* and the way he argues in *On Liberty* and note the

influences of rationalist philosophers of Enlightenment on the writers of our Bill of Rights. Let us tell our women students who admire Adrienne Rich's "Dream of a Common Language" that Leibniz and d'Alembert had a related dream and discuss the similarities and differences.

And most importantly of all, let us stress the use of logic as an instrument of criticism. Nye is correct in saying that too often logic is viewed as a hammer--if you accept these premises, then by God (and by *modus ponens*) you've got to accept these logical consequences. But *modus tollens* is a rule of logic, too. And *modus tollens* says that if a logically correct argument leads to a false conclusion, then by God (or by Goddess!) something is wrong with the premises. Here logic is acting like a tiny sharp needle--the discovery of one little falsehood can discredit an enormous deductive system. That is why understanding logic is an invaluable tool for people who have little physical or economic strength but do have sharp wits and a rigorous mind.

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The typical scholarly response would be to check Nye's sources and correct any misinterpretations. For example, Nye claims that in Frege's essay entitled "Thoughts", he says that logical thought "can be used like a 'hammer' is used, to bring about the 'great events of world history'...[B]etter than a material hammer, it may be used by many at a time, by a state, by a ruling party." (Nye, p. 159-160) Her next chapter which attempts to link Frege with Hitler is then titled, "A Thought like a Hammer: The Logic of Totalitarianism".

But if we go back to Frege's own essay, we find little solace for the authoritarian. Frege begins his final paragraph this way:

"How does a thought act? By being grasped and taken to be true...If, for example, I grasp the thought we express by the theorem of Pythagoras, the consequence may be that I recognize it to be true, and further that I apply it in making a decision..." (Frege, LI, pp. 28-29)

So far Frege has focused on the inner world of the individual thinker and how our judgments of truth may influence our actions. He then goes on to describe how thoughts are passed on to others.

"The influence of man on man is brought about for the most part by thoughts. People communicate thoughts...Could the great events of world history have come about without the communication of thoughts? And yet we are inclined to regard thoughts as unactual, because they appear to do nothing in relation to events, whereas thinking, judging, stating, understanding, in general doing things, are affairs that concern men. How very different the actuality of a hammer appears, compared with that of a thought!" (Frege, LI, p. 29)

Nye would have us believe that this essay about the reality of ideas and their influences on the lives of individuals who judge them to be true should be read as a recipe for brain-washing and extermination camps. It is, of course, impossible to refute a "reading". But perhaps the quotations I have displayed might prompt some readers to read Frege for themselves. When confronting books which provide a wholesale condemnation of a long and complicated episode in human history one should always consider the possibility that some accusations are telling us more about the accuser than the accused.

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