

WHAT AUSTRIAN SCHOLARS SHOULD KNOW ABOUT LOGIC (AND WHY)

STEVEN YATES

1.

Why is logic, usually thought of as a branch of philosophy, important to Austrian scholars, most of whom are economists and not philosophers? The aim of this paper is to sketch a number of reasons and draw some conclusions. It is worth observing, first, that David Gordon's *An Introduction to Economic Reasoning*, possibly the only economics text written from an Austrian-School point of view, begins with a brief discussion of deductive logic as the primary tool of economics. What is it about deductive logic that makes it such a good tool? Gordon writes:

Given a true statement, we can, by using deduction, obtain other true statements from it. These new statements not only are true—their truth is guaranteed! If the statements we started with are true, then our conclusions are also true. . . . An argument in which the conclusion is correctly deduced from the premises is called a valid argument. If we can (somehow) arrive at true premises, then we are guaranteed true conclusions. (Gordon 2000, pp. 1-2)

This raises two issues: (1) What relationships between premises and conclusions guarantee that if the former are true the latter must be true? (2) How can premises be known to be true? If we can answer (1) we can do “formal” or “minor” logic. If we can answer both (1) and (2), we can add “material” or “major” logic.¹

STEVEN YATES is adjunct instructor of philosophy at University of South Carolina Upstate and University of South Carolina Union. This paper has profited, hopefully, from a number of criticisms by Jörg Guido Hülsmann, although I remain responsible for any unclari- ties and errors it might yet contain.

¹These are Jacques Maritain's terms; cf. below.

First, though, what is logic? Different modern and contemporary texts provide a range of answers. Morris Cohen and Ernest Nagel (1934, p. 5) wrote in their classic *An Introduction to Logic and Scientific Method*: “Logic may be said to be concerned with the question of adequacy or probative value of different kinds of evidence.” From one of the most widely used contemporary texts, that of Copi and Cohen (1994, p. 2): “Logic is the study of the methods and principles used to distinguish good (correct) from bad (incorrect) reasoning.” These remarks enable us to pin down central aspects of the subject—it is, at the very least, the study of the rules governing correct reasoning, violations of which are called *fallacies*. Logic is more, however: more than just a branch of philosophy, it stands at the core of a set of disciplines that include mathematics, geometry, and praxeology. All these share a single major trait: their fundamental propositions are grasped intellectually and therefore known to be true *a priori*. Logic is broad enough to “stand over” these by virtue of its capacity to study what it means to say that propositions are grasped intellectually and known *a priori*. The French Thomistic philosopher and theologian Jacques Maritain defined logic as follows:

Logic studies the reason itself as an instrument of knowledge, or a means of acquiring and possessing the true. It may be defined as: *the art which directs the very act of reason, that which enables us to advance with order, ease and correctness in the act of reason itself.* (Maritain 1946, p. 1)

Maritain goes on to discuss how logic not only

proceeds in conformity with reason . . . but bears upon the act of reason itself. . . . The *reason* is not another faculty than the *intellect* (the *understanding*): but from the point of view of the functioning of this faculty, it is called more especially the *intellect* when it sees, grasps or “apprehends,” and more especially the *reason* when it proceeds through discourse from the apprehension of one thing known to another. (Ibid.)

Logic is thus a foundational endeavor (contemporary attacks on “foundationalism” notwithstanding).² The objects of logic include propositions of complete generality (identity, contradiction). Logicians can reflect on their methods and indicate how these methods apply to other disciplines and domains. It thus provides not just groundwork for the science of economics as understood by Austrian School thinkers but offers common ground with other disciplines, including philosophy and two of its key branches: metaphysics and epistemology.

Reasoning frequently manifests itself as *arguments*—sets of propositions in which some (called premises) are used as evidence to support another proposition (called the conclusion). Logic employs specific rules of inference

²As exemplified in, e.g., Rorty (1979).

to assess the adequacy of the results, as Cohen and Nagel observe. Deductive arguments, discussed by Gordon (2000, chap. 1), aim for logical closure. A deductively valid argument is structured so that true premises guarantee a true conclusion: (1) above. Premises in inductive arguments only support their conclusions to some degree of probability. According to Ludwig von Mises, praxeology is a deductive science; its propositions are inferred deductively from the action principle, grasped intellectually and known to be true *a priori*: (2) above.

It follows, at the very start, that Austrian scholars should know something of deductive logic: what it is, how a deductive argument is structured, and how to apply deduction. These are the *first* and most obvious things Austrian scholars should know about logic. I would argue that the study of logic in light of the many achievements of the Austrian School of economics provides much deeper insights. (1) implies the canons to which Gordon referred that identify the rules governing deductive validity—assuring that true premises guarantee a true conclusion. These rules are typically designated with names like *modus ponens*, *modus tollens*, hypothetical syllogism, categorical syllogism, instantiation, and so on. Austrian scholars should know something of these as part of their general background knowledge.

(2), however, implies something more fundamental and therefore more central to the Austrian School. How can we be assured that our first premises are both true and known to be true, as opposed to mere belief? In other words, what are we saying when we say that we have grasped the truth of the action principle intellectually, or by reflective understanding? Without addressing this, the Austrian School cannot claim to have moved beyond opinion. It doesn't help to say that the truths of logic, mathematics, or praxeology are self-evident (as Mises unfortunately sometimes does). *Self-evidence* is a dangerously psychologistic notion (*psychologism* being the doctrine that the principles of logic are reducible to the principles of psychology). What is self-evident to *A* may not be at all self-evident to *B* and may seem downright absurd to *C*. Likewise with *certain*. *Certainty* is also a psychological rather than a logical operator; it indicates not knowledge but very strong belief. I may be as certain as I can be that it will rain tomorrow; it does not follow that it will indeed rain tomorrow. One can be certain and wrong. We need to be sure to remain within logic's domain of reference, range of investigation, and vocabulary. Therefore we should speak not of certainty but *necessity*—a relationship between propositions that follow from antecedent propositions with the closure of strict deduction. We need to ask: are there propositions that one apprehends intellectually (in the sense of Maritain above) as universal truths as a component of correct reflective understanding? Such propositions would be self-validating in the sense that we would find ourselves having to employ them even in an attempt to cast doubt on them or deny them. These would be those propositions of complete generality mentioned above, belonging at the *foundations* of logic.

2.

I would assert, therefore, that the *second* thing Austrian scholars should know about logic has to do with the foundations of logic—especially as the results offer prospects both for the long-deferred revolutionizing of the scientific study of the acting person. Such a change of perspective holds out hope of reversing the self-destructive course of both philosophy and economics (among other disciplines), as practiced in universities, have been on for perhaps the past 150 years.

Let us see how issues related to the foundations of logic arise in Mises's work.

Mises does not provide us with an explicit definition of logic or unpack its basic nature, much less consider its foundations. But much of what he has to say in the crucial first 100 or so pages of *Human Action* clearly implies such. Other writings such as *Epistemological Problems of Economics* and *The Ultimate Foundation of Economic Science* also call forth a philosophy of logic that can be elucidated as an essential component of a broader *Austrian School paradigm* of philosophical and scientific scholarship that includes Austrian School economics as a special case (Mises 1976 and 1962). What would distinguish this paradigm is its apriorism—its insistence, that is, that there are propositions the truth of which is grasped intellectually and not empirically, and that among these are the foundational truths of praxeology such as the action principle. The historiographic task of drawing the historical antecedents of the Austrian school is well underway (Smith 1994; Gordon 1996; Rothbard 1997; pp. 173–94). The task of charting its philosophical antecedents and consequences has only begun (Smith 1990, pp. 263–88). So let us consider first those aspects of Mises's work that point toward an aprioristic philosophy of logic.

Human Action takes the acting person in whatever surroundings he finds himself as its starting point; logic and its foundations enter the picture immediately, implied in or deducible from this starting point. Mises writes in one of his most relevant passages:

[T]he problem of the a priori . . . refers to the essential and necessary character of the logical structure of the human mind.

The fundamental logical relations are not subject to proof or disproof. Every attempt to prove them must presuppose their validity. It is impossible to explain them to a being who would not possess them on his own account. Efforts to define them according to the rules of definition must fail. They are primary propositions antecedent to any nominal or real definition. They are ultimate unanalyzable categories. The human mind is utterly incapable of imagining logical categories at variance with them. No matter how they may appear to superhuman beings, they are for man inescapable and absolutely necessary. They are the indispensable prerequisite of perception, apperception, and experience. . . .

The human mind is not a tabula rasa on which the external events write their own history. It is equipped with a set of tools for grasping reality. . . . The fact that man does not have the creative power to imagine categories at variance with the fundamental logical relations and with the principles of causality and teleology enjoins upon us what may be called *methodological apriorism*. (Mises 1966, pp. 34-35)

Mises has penned here not a system of logic but pointed (incompletely) toward the foundations of logic—in a way that also implies an epistemology and the outlines of a metaphysics or theory of reality that can continue developing. These results, I would argue, tie the Austrian school to the larger Aristotelian-Thomistic tradition. In a sense, Mises has implicitly built up his system of economics within an intellectual paradigm capable of including both.

At the foundations of this paradigm are the principles of identity and contradiction—Aristotle’s “laws of thought” which if construed realistically must be seen not just as laws of correct thought but of reality. These laws are grasped intellectually. They are also absolutely general. They apply not to this or that state of affairs but to all actual and imaginable states of affairs. Aristotle (1941, pp. 735-43) originally argued that to understand the principle of contradiction is to apprehend that its denial is unintelligible. Mises (1966, p. 35) continues: “The idea that *A* could at the same time be *non-A* or that to prefer *A* to *B* could at the same time be to prefer *B* to *A* is simply inconceivable and absurd to a human mind. Does this imply—for Mises as well as for Aristotle (and Aquinas)—that the principles are universally valid for reality as well as for human thought? Here a possible ambiguity creeps in. On the one hand, many scholars (e.g., Hoppe) have referred to a Kantian dimension in Mises’s thought. Undoubtedly Mises studied Kant. Mises’s use of the term *category*, as opposed to my *proposition*, suggests Kant. We have the implication above that the propositions at the foundation of logic (and all their implications as well as the action principle itself) might be apprehended differently by a “superhuman being”—such as God—and are thus unique to human beings. As Mises puts this:

It is idle to ask whether things-in-themselves are different from what they appear to us, and whether there are worlds which we cannot divine and ideas which we cannot comprehend. These are problems beyond the scope of human cognition. Human knowledge is conditioned by the structure of the human mind. If it chooses human action as the subject matter of its inquiries, it cannot mean anything else than the categories of action which are proper to the human mind and are its projection into the external world of becoming and change. All the theorems of praxeology refer only to these categories of action and are valid only in the orbit of their operation. They do not pretend to convey any information about never dreamed of and unimaginable worlds and relations. (Mises 1998, p. 36)

Elsewhere, however, Mises appears to grasp for something more ambitious. A few years back he had written:

The first point to be established . . . is that none of the sources of historical information accessible to us contains anything that could shake the assumption of the immutability of reason. Never has even an attempt been made to state concretely in what respects the logical structure of reason could have changed in the course of the ages. The champions of historicism would be greatly embarrassed if one were to require of them that they illustrate their thesis by pointing out an example. . . . [I]n what way [is] the logic of primitive peoples . . . structurally different from our logic[?] (Mises 1976, pp. 102-03)

Even more revealing:

The categories of human thought and action are neither arbitrary products of the human mind nor conventions. They are not outside of the universe and of the course of cosmic events. They are biological facts and have a definite function in life and reality. They are instruments in man's struggle for existence and in his endeavors to adjust himself as much as possible to the real state of the universe and to remove uneasiness as much as it is in his power to do so. They are therefore appropriate to the structure of the external world and reflect properties of the world and of reality. They work, and are in this sense true and valid.

It is consequently incorrect to assert that aprioristic insight and pure reasoning do not convey any information about reality and the structure of the universe. The fundamental logical relations and the categories of thought and action are the ultimate source of all human knowledge. They are adequate to the structure of reality, they reveal this structure to the human mind and, in this sense, they are for man basic ontological facts. (Ibid., pp. 85-86)³

These insights apply to praxeology. Praxeology, the general science of human action, refers to categories of action. The results suggest a bridge from praxeology to an epistemology and metaphysics via the logic that conceptually contains both. In the context of explaining why the general science of human action must differ from the physical or natural sciences, Mises erects the scaffolding of this bridge:

The real thing which is the subject matter of praxeology, human action, stems from the same source as human reasoning. Action and reason are congeneric and homogeneous; they may even be called two different aspects of the same thing. That reason has the power to make clear through pure ratiocination the essential features of action is a consequence of the fact that action is an offshoot of reason. The theorems attained by correct praxeological reasoning are not only perfectly certain and incontestable, like the correct mathematical theorems. They refer, moreover, with the full rigidity of their apodictic certainty and incontestability to the reality of action as it appears in life and history. *Praxeology*

³Mises cites Cohen (1931, pp. 202-05; 1944, pp. 41-44, 54-56, 179-87).

conveys exact and precise knowledge of real things. (Mises 1966, p. 39; emphasis added)

With this last especially, suggestions of a Kantian transcendental idealism seem to dissolve. Unfortunately, Mises continues:

We do not know what a superhuman intellect may think and comprehend. For man every cognition is conditioned by the logical structure of his mind and implied in this structure. It is precisely the satisfactory results of the empirical sciences and their practical application that evidence this truth. Within the orbit in which human action is able to attain ends aimed at there is no room left for agnosticism. (Ibid., p. 86)

The emphasis is on *acting man*. The result—as well as the observation above that these categories “work” as central to their justification—suggest a kind of post-Kantian pragmatism, perhaps on the order of that defended by Clarence Irving Lewis (with Lewis’s collectivism subtracted, of course) (1956; and in Konvitz and Kennedy 1960, pp. 305–15). Is there any room for agnosticism regarding the applicability of the propositions of logic either to beings other than men or to the world generally, considered independently of our thought about it and experience of it?

Action is the conscious employment of at least one means to achieve at least one prior-imagined end. The means employed, as well as the end achieved, considered as states of affairs in the world as well as means and ends, are independent of the conscious actor, with the former selected from the options present in the actor’s surroundings. The same is true of the principles ensuring the means selected are appropriate to achieving the ends desired. *Action*, that is, is necessarily *action in the world*—in a set of surroundings containing objects and processes behaving in specific ways conforming to specific patterns and registering on our sensory apparatus in specific ways. Once we realize this, all suggestions of transcendental idealism and pragmatism ought to disappear.⁴ What can only be described as an extreme realism—and (in contrast to what is probably the dominant school of thought in academic philosophy today) an extreme foundationalism—arises to take its place.⁵ It is the apriorist element that points

⁴See Gibson (1966) for an ecological approach (Gibson’s term for something that is actually very Aristotelian overall in its account of perception) that, applied to the situations of interest to Austrian scholars, also situates the aware and acting person in an environment with determinate properties.

⁵The most prominent critic of “foundationalism” among professional philosophers has probably been Richard Rorty; cf. again his *Philosophy and the Mirror of Nature*, he was pursuing tendencies already active in both the “analytic” and “continental” schools in contemporary philosophy and which have converged as postmodernism, which denies the existence of transcultural and transhistorical truths to be known in favor of the historical and cultural dependency of all knowledge. By foundationalism Rorty didn’t have in mind a single doctrine but several: Platonism, Cartesianism, Kantian transcendental idealism, logical empiricism, among others—all of which hold that there is an epistemic “bedrock” of first

at this foundationalism by asserting that some knowledge of general or universal truths can be had *a priori* by what Maritain called apprehension. Or as Hoppe, having worked his way through the Kantian argument, expressed this insight:

We must recognize that such necessary truths are not simply categories of our mind, but that our mind is one of acting persons. Our mental categories have to be understood as ultimately grounded in categories of action. And as soon as this is recognized, all idealistic suggestions immediately disappear. Instead, an epistemology claiming the existence of true synthetic a priori propositions [that of Kant's system] becomes a realistic epistemology. Since it is understood as ultimately grounded in categories of action, the gulf between the mental and the real, outside, physical world is bridged. As categories of action, they must be mental things as much as they are characteristics of reality. For it is through actions that the mind and reality make contact. (Hoppe 1995, p. 20)

3.

This last points directly toward a *third* truth that Austrian scholars should know about logic—that its propositions apply to the world in ways we apprehend as causes and effects; i.e., the general category *causality* applies to the world. In other words, Kant's wrong turn was in having answered Humean skepticism with *impositionism*: the fundamental categories (logical foundations, deductive relations, causality and so on) are not apprehended in reality in their various concrete instances but are imposed by the human mind on a *Ding-an-Sich* (Smith 1990b). Impositionism would imply a “praxeology” the fundamental categories of which are deducible from or reducible to only our “laws of thought” and could be different for a nonhuman intelligence. Mises offers insights out of accord with this interpretation. Consider his observations on the relationship between human action and causality:

Man is in a position to act because he has the ability to discover causal relations which determine change and becoming in the universe. Acting requires and presupposes the category of causality. Only a man who sees the world in the light of causality is fitted to act. In this sense we may say that causality is a category of action. The category *means and ends* presupposes the category *cause and effect*. In a world without causality and regularity of phenomena there would be no field for human reasoning and human action. Such a world would be a chaos in which man would be at a loss to find any orientation and guidance. Man is not even capable of imagining the conditions of such a chaotic universe.

principles, logical or otherwise, or a permanent matrix of categories or a permanent set of eternal objects or other apprehendable entities of which it is the special task of philosophy to discover and elucidate. Suffice it to say—if the Austrian School is the correct one, then postmodernism is wrong through and through—and if postmodernism is true (whatever sense that would make) than all of us are delusional.

Where man does not see any causal relation, he cannot act. This statement is not reversible. Even when he knows the causal relation involved, man cannot act if he is not in a position to influence the cause. (Mises 1966, p. 22)

This does far more to answer Hume's skepticism. It unpacks the action principle in another way, such a way as to infer the category of causality *a priori*: known independently of experience in the sense that successful action in the world presupposes it. This is why, of any event, we almost automatically look for its cause or causes—assuming without seriously questioning that such a relation exists to be found. To say of some event, “This was caused by nothing at all; it just sprang into existence by complete happenstance,” makes no sense and in practice will not even be entertained. So although we must discover particular causes (or networks of causes) by empirical means, the category of causality itself is never in question.

Carl Menger, of course, emphasized causality to the point of making it the subject of the very first paragraph of his *Principles of Economics*, writing:

All things are subject to the law of cause and effect. This great principle knows no exception, and we would search in vain in the realm of experience for an example to the contrary. Human progress has no tendency to cast it into doubt, but rather the effect of confirming it and of always further widening knowledge of the scope of its validity. Its continued and growing recognition is therefore closely linked to human progress. (Menger 1994, p. 51)

Menger proceeds to situate human needs and the conditions for their satisfaction into this world governed by a causality known *a priori*. The *a priori* nature of the category, of course, does not inform us about the specific conditions of the events that make up our everyday experience. These can only be discovered empirically. Our perception that a given event has a given cause (or, more specifically, a set of necessary and sufficient conditions) has been a philosophical problem since the time of Hume, one the elucidation of which goes beyond the scope of what can be attempted here. Suffice it to say, sometimes this perception is astoundingly simple. For example, it does not take many experiences of touching active burners for a small child to realize that *active burners on stoves burn*. The child quickly learns not to touch them long before he is old enough to understand anything as abstract as *cause and effect*.

On the other hand, it is often not realized by purveyors of statistics as a source of deep insights that a statistical correlation does not lead logically to a causal claim. (The correlation may be strong, with numerous instances, and free of counterinstances; thus in the absence of good grounds for doubt it might be unreasonable to withhold the judgment that a causal relationship exists between the events correlated.) This is because such inferences have an inductive, not a deductive, structure. This result suggests that an aprioristic argument regarding causality as a product of intellectual insight might be

much stronger than it appears at first glance. In this case, Hume may have been right in his judgment that we never experience causality in the sense of a power through which one event produces another. His starting point, however, was his impressionism: his conviction that all our knowledge begins with units of experience he called impressions, and that any idea we might have, such as causality, must be traceable to an antecedent impression. If there is no such impression to be associated with causality, then in the Humean view we have no clear idea of it. Such was empiricism in the hands of Hume, and it made our knowledge of causes and effects ultimately mysterious.

4.

The villain, in this case, is empiricism as a theory of knowledge. This tells us the *fourth* thing Austrian scholars should know about logic: that the particular philosophy of logic embodied in methodological apriorism and this account of causality invites both a devastating critique of empiricism as a comprehensive epistemology and promises a viable, equally comprehensive alternative. Indeed, alternative schools of economics—even freedom-oriented ones such as the Chicago School—embed empiricism into their methodologies. This doubtless explains why advocates of the latter, such as Milton Friedman (1991, p. 18), have complained about Mises’s “intolerance.” Such allegations can now be answered.

Empiricism has long been proving itself unsatisfactory to conscientious scholars with very little help from the Austrian School, however. The positivism of Auguste Comte 150 years ago proposed a militant empiricism as standing at the core of all scientific methodology. Since then, however, methodology guided by empiricist assumptions has been disintegrating a little at a time. In Comte’s writings, philosophy as traditionally conceived is to be supplanted entirely by natural science conceived as a unity whose ideal form was physics. The story of the slow dissolution of modern thought under this body of assumptions is too long to be told here.⁶ To be brief, and without maintaining that this is the only possible approach:⁷ in the philosophy of logic, and of mathematics as well, positivism as a method and empiricism as an epistemology led to *conventionalism* in the philosophy of logic. This is the doctrine, alluded to by Mises above, that the laws of logic (and mathematics) are combinations of signs devised by us, for our purposes, and have no relation to reality. They are analytic propositions, truths by definition, designation or stipulation. This view was given its clearest expression by logical positivist philosopher A.J. Ayer who wrote famously that

⁶I tell it in my book *In Defense of Logic: Against Polylogism and Conventionalism*, undergoing revisions.

⁷For a somewhat different and possibly more standard approach see Hayek (1952).

[t]he principles of logic and mathematics are true universally simply because we never allow them to be anything else. And the reason for this is that we cannot abandon them without contradicting ourselves, without sinning against the rules which govern the use of language, and so making our utterances self-stultifying. (Ayer 1962, p. 77)

If principles of logic and mathematics are true “because we never allow them to be anything else” (implying that we make the choice) then why is it impossible to abandon them. Why is it impossible to find alternatives to them that do not “sin” against the rules of language? To such a question, logical positivism and its immediate successor, logical empiricism, never had an answer. Also frustrating logical positivist and logical empiricist philosophy of logic was the enormous applicability of instances of both logical and mathematical reason to a variety of real world problems. This is rendered utterly mysterious by conventionalism. Real-world problems have ranged from ancient man’s inferences from changing seasons to specific conditions for planting crops to modern civilization’s application of increasingly sophisticated forms of mathematics and other purely formal relations to the construction of buildings, bridges, electrical devices, rocket ships, eventually computers, among an ever-widening array of other engineering and technological marvels. I have elsewhere offered an account of tortured attempts to reconcile such commonplaces with conventionalism (Yates unpublished, chap. 5).

Empiricism in the hands of the logical empiricists triggered countless technical problems (e.g., Goodman’s [1979, pp. 59-73] aberrant predicates “grue” and “bleen”⁸ as well as paradoxes such as that of the raven pp. 70-72).⁹ It grew increasingly remote from the sciences positivist and logical empiricist philosophers had set out to elucidate.¹⁰ The historicist rebellion, one might call it (I have in mind here writers such as Norwood Russell Hanson [1958], Thomas S. Kuhn [1970] and Paul Feyerabend [1975]) dislodged *logical* empiricism but did not overthrow empiricism itself. They provided extensive arguments against the idea that experience alone (observation sentences rooted in “sense data,” etc.) provides a kind of bedrock against which theoretical statements can be tested—but they did not reinvestigate the possibility of

⁸This essay was originally delivered as a lecture at the University of London in 1953.

⁹The idea here is that “All ravens are black” is formally equivalent (by the purely formal move known as transposition) to “all non-black things are non-ravens.” According to positivism the only way to confirm the truth of “All ravens are black” is experience; but because of the formal equivalence, whatever confirms “All ravens are black” also confirms “all non-black things are non-ravens,” resulting in the absurd result that the observation confirms virtually any universal statement whatsoever. Such paradoxes, the working out of which actually consumed a great deal of energy on the part of academic philosophers, actually illustrate the utter hopelessness of any account of science premised on the denial that science involves any *a priori* propositions about the world.

¹⁰See Whitehead (1929, p. 18): “The evidence that a methodology is worn out comes when progress within it no longer deals with the main issues. There is a final epoch of endless wrangling over minor questions.”

propositions capable of apprehension *a priori*. Not even the British philosopher of science, Nicholas Maxwell, whose work comes the closest to breaking out of the empiricist box, really broke with the broader empiricist stance. Maxwell (1974, pp. 123-53, 247-95) noticed that science makes substantial *a priori* presuppositions about the world, but he infers from this not apriorism but what he calls aim-oriented empiricism, according to which we cannot really *know* that our *a priori* presuppositions are true.¹¹ He does not see us as capable of grasping foundational truths intellectually, as did Aristotle, Aquinas, and Maritain.

Hence—to make a long story far too short—the discipline of philosophy devolved into a mixture of evolutionary naturalism (Quine,¹² Kuhn [1970]), epistemological behaviorism and eliminative materialism (Rorty [1979], the Churchlands [Churchland, Paul 1979 and Churchland, Patricia 1984]), and out-and-out relativism or “epistemological anarchism” (Feyerabend [1975 and 1987]). Austrian scholars, as I’ve said above, should know the logical foundations out of which Austrian School economics emerges via deductive reasoning; they should also know how the empiricist alternative has simply disintegrated over the past 60-80 years. This knowledge would provide a formidable rhetorical weapon against *all* empiricist schools of economics. Mises, in fact, anticipated the criticism of the “historicist philosophers of science” (Hanson, Kuhn, Feyerabend, et al.):

Nothing is more clearly an inversion of the truth than the thesis of empiricism that theoretical propositions are arrived at through induction on the basis of a presuppositionless observation of “facts.” It is only with the aid of a theory that we can determine what the facts are. . . . To apply language, with its words and concepts, to anything is at the same time to approach it with a theory. Even the empiricist, who allegedly works without presuppositions, makes use of theoretical tools. They are distinguished from those produced by a scientific theory only in being less perfect and therefore also less useful. (Mises 1976, p. 28)¹³

These schools—of logical empiricism, historicism, behaviorism, and so on—are now entirely played out. They have nowhere left to go. Most of contemporary philosophy is entirely self-contained. It may occasionally speak to larger issues, but in a fashion severed from all epistemological foundations, in accordance with Rorty’s attack on such. The contemporary humanities generally

¹¹Maxwell’s work merits more attention than it has received. His latest book bears the provocative title *The Comprehensibility of the Universe: A New Conception of Science* (1998).

¹²See Quine (1969) especially the essay “Epistemology Naturalized,” pp. 69-90.

¹³Although there is not space to develop the point here, Mises might be said to have, in this passage, anticipated by 30 years important aspects of Kuhn’s views—minus, of course, the defective epistemology that plagued *The Structure of Scientific Revolutions* and got Kuhn branded (falsely) as a relativist.

grant only historical and cultural contingency; they urge that we strive not for objectivity but for solidarity, understood epistemically as a quest for consensus, not for metaphysical truth as correspondence with reality (Rorty 1989; Smith 1988). Such notions by their nature cannot move beyond opinion—opinions unlikely to interest policy-makers!—because they work from the premise that opinion is all there is! Some opinions are better for us to believe (e.g., “love is better than hate”); some not. Why this is so is a question the post-modernists stalking the contemporary academic wilderness would have us set aside as meaningless or futile. Contemporary psychology has proven of more interest to those intent on planning a certain kind of society with a command economy. In the absence of foundations that could ground a moral view of human life, contemporary psychology lends itself to the interests of those who would manipulate others, working particularly through the institutions of public (state-sponsored) education (Eakman 1998). This illustrates the cultural and educational dangers of abandoning truth and intellection.

5.

Above, we remarked on Aristotle’s extensive argument that efforts to deny the principle of contradiction result in unintelligibility. Likewise, several authors including Hoppe (1995, p. 61) and Selgin (1990, p. 15) have observed that the denial that man acts would itself be an action, concluding that the action principle is self-validating. This points toward the *fifth* thing Austrian scholars should know about logic: it would have been far simpler to demolish the original Comtean illusions by way of pointing out the performative contradictions they involve. A *performative contradiction* is a proposition the content of which is falsified by the act (or performance) of uttering it. The denial that *man acts* is an example—for denials of anything are themselves linguistic *actions*. It makes no sense to understand them in any other way.

Performative contradiction, however, is just one species of a broader strategy of logical reasoning that can be applied to all forms of empiricism. Here is how it works. The central claim of empiricism, that all knowledge arises through or is reducible in some way to sense experience, cannot itself arise through or be reduced in some way to sense experience. It isn’t that kind of claim. Thus the central claim of empiricism, if accepted as true, is in the embarrassing position of being a counterexample to itself. To approach this from a slightly different direction: the validation of sense experience—the idea, that is, that the senses do provide us with reliable knowledge at least some of the time, as opposed to dreams and horoscopes—cannot itself be found in sense experience, because that would beg the question. Empiricism cannot, that is, “bootstrap” its way to self-validation. The *fifth* thing Austrian scholars should know about logic and its applications, in this case: general theses involving human experience, human knowledge, human reasoning as well as human action, are invariably self-applying. The denials of some of these theses are *self-referentially inconsistent*, to use the term employed by Frederic B.

Fitch (1952, app. C), a mathematical logician who was unusually sensitive to the philosophical implications of his subject matter. Performative contradiction is then a variant on self-referential inconsistency. It applies to the core of empiricist dogma itself: that we acquire knowledge only through observation, and never through pure reasoning independent of observation. As Hoppe (1995, p. 61) also notes, the empiricist does not actually observe people *acting*; what he *observes* are bodily motions, what Skinner calls verbal behavior (speech), and so on. Indeed, behaviorism is the most logical approach to take to the scientific study of human beings if empiricism is your starting postulate—however paradoxical is the predicament of the “thinking behaviorist” as well as the acting behaviorist who is *defending* behaviorism to an audience of people who are attempting to *decide* whether the arguments in defense of behaviorism are rationally grounded (Lovejoy 1922, pp. 135–47). Human action can only be understood—and validated—by *a priori* argumentation and methodology, and this calls forth an apriorist epistemology as well. The ultimate justification for these moves is (1) Aristotle’s principle of contradiction and (2) the further principle that general theses about human beings and their activities, since formulated and defended by human beings, these theses necessarily apply to themselves, i.e., are self-referential in view of the performance involved in formulating, articulating, and defending them with arguments.¹⁴

6.

There is a *sixth* thing Austrian scholars should know about logic, and it is this: given our results so far, there is one and only one correct logic—despite Mises’s own occasional demurrals. Occasionally he suggest the possibility of beings possessing different sets of logical categories—subhuman or superhuman—or that reason is transitory.¹⁵ It is now both possible and necessary to lay this ambiguity to rest—returning to the Mises who wrote the above paragraph about the “immutability” of reason. The propositions at the foundations of logic are immutable (although a people’s capacity to grasp them may indeed be transitory!). Can anyone seriously suppose that the principles of identity and contradiction are “true for us” but not “true for God” (for example)? Or that it is possible that for God there can both be and not be houses on Elm Street at the same time and place, or that God could will that seven and five add up to some number other than twelve? (Clark 1985, pp. 117–31). Is it possible that the brains and nervous systems of some hypothetical intelligent extraterrestrial

¹⁴For further articulation and defense of these points see Yates (unpublished, chap. 4).

¹⁵See, e.g., Mises (1966, pp. 33–34), where he suggests that “reason, intellect and logic are historical phenomena” that are “transitory” and present a “historical phase between prehuman logic on the one hand and superhuman logic on the other.” Such passages show that even the greatest thinkers are only human and have occasional lapses in judgment.

species are sufficiently different from ours as to embody different laws of logic and systems of mathematics? I submit that the person who hypothesizes such has not really apprehended these laws or understood Aristotle's fundamental argument—surely one of the most important in the whole history of Western philosophy—that any intelligible attempt to cast doubt on the principle of contradiction or set it aside presupposes it and invalidates skepticism toward it. Now one can find scientists who suggest that the brain of each species constructs its own universe—that reality itself is a “construction” of the brain and nervous system of a species (Jerison 1976, pp. 92-101). This raises all over again the issue of the status of the brain and nervous systems undertaking the studies. Are they “constructions” of themselves? (Katz and Frost 1979, pp. 35-44). It may well be that the brain of a species “constructs” a perceptual *sensorium* that will differ from species to species relative to the capacities of its members' senses to register sensory input, thus delivering a “cross section” of what is real that will in fact be exceedingly difficult for a member of another species even to imagine in terms of its appearance (Nagel 1974, pp. 435-50; Lettvin et al. 1959, pp. 1940-51). But necessarily (for species capable of functioning at the conceptual level, anyway) laws of logic, mathematics, and praxeology are invariant. There is again at most one logic—even for superhumans, extraterrestrials, and God Himself!

All forms of what Mises called *polylogism* are therefore false and impossible. Mises's own remarks are directed against two forms of polylogism, classical Marxist polylogism and racialist polylogism (Mises 1966, pp. 72-91). The former held that bourgeois and proletariat experienced the world in different ways because they employ different “logics.” The latter held that different racial groups have different “logics.” Both positions are still around. One may occasionally still hear Marxists resort to concepts like “class consciousness.” The latter is instantly recognizable in the “afrocentricity” and various forms of multiculturalism also stalking today's academic wilderness; it often comes accompanied by what may be called radical feminist polylogism and still others (Yates unpublished chap. 1).

What refutes every form of polylogism is the realization that there can be at most one set of logical categories whose exact nature is implied in the Aristotelian principles of identity and contradiction, alongside their corollaries. To these there can be no intelligible, coherent alternatives, only different levels of mastery.¹⁶ This realization creates the conditions for an Austrian scholarship that can set itself apart as radically (in the original and highest sense of that term) different from the modes of thought that have become dominant in the scholarship of much of the rest of higher education today. There are libertarians who have attempted to maintain what they no doubt consider a safe distance from the Austrian School of economics—under the misconception that Misesian thought inculcates a *homo economicus* view of the human

¹⁶See again Yates (unpublished, chap. 4). For a recent favorable analysis of Aristotle's defense of the principle of contradiction see Rasmussen (1973, pp. 149-62).

condition.¹⁷ Mises, however, makes no such assumption (Mises 1966, p. 62). He does assert, contrary to Objectivists who follow Ayn Rand, that human action is motivated by factors other than reason in her sense (p. 46). But this is just to say that human action is one of many kinds of phenomena taking place in the world, even if it must be understood “from the inside,” *a priori*, instead of “from the outside,” empirically, because of the special relationship human beings hold to their own actions.

7.

With this we come to the final issue. Asked in the title is not just what Austrian scholars should know about logic but why Austrian scholars should know about logic? In large measure, the *what* should have answered the *why*. But a few additional remarks are in order. Austrian scholarship, like any other paradigm that often addresses technical issues, is ever in danger of becoming just one more approach not just specialized but specialist. That is, it would regard addressing technical problems as an end in itself (Maxwell 1980, pp. 19-81). An Austrian scholarship that advances in full light of its logical and epistemological as well as its methodological premises has the potential to address areas other than economics. Undoubtedly some of its results in philosophy, or in psychology (where it offers a potentially very precise and systematic alternative to schools such as behaviorism), will feed back into economics, perhaps shedding light on issues in economics in ways none of us can predict in advance but would not want to find ourselves ruling out.

In the meantime, the approach suggested here suggests that Austrian scholars be fully cognizant of the logical structure of such moves as the defense of the action principle and consequent defense of the *a priori* understanding of human action. They should be cognizant of the larger epistemological and metaphysical implications of the results. This is so such moves can be wielded effectively in neighboring subject domains. This will enable us to see Austrian scholarship generally as a larger paradigm (in Kuhn’s sense but minus Kuhn’s evolutionary naturalism, itself haunted by self-application problems) for scholarship (Rothbard 1997, pp. 195-210). Enhancing the possibilities here is the fact that the Austrian School’s slow but steady gains in recognition among a new generation of scholars as having the only viable account of such real-world problems such as why “booms” (e.g., the late 1990s) are invariably followed by “busts” (the early 2000s). Kept free of the mindset of specialism, this paradigm addresses the issues of our time forthrightly and not evasively. It ultimately provides the intellectual foundation for whatever hypothetical free society, based on the free actions and interactions

¹⁷See e.g., Machan (1990, pp. 18-19). Although not discussing Mises or the Austrian school per se the arguments in Machan *The Moral Case for the Free Market Economy* (1988; 2000) are relevant to this issue. The free will/determinism dispute is a philosophical mare’s nest that goes well beyond the scope of what can be attempted here.

of human beings living in a real world, might be built up on top of the one the omnipotent state and the forces of positivism, polylogism, and other forms of irrationalism are slowly but surely destroying.

REFERENCES

- Aristotle. 1941. *Metaphysics, Book ?* In *The Basic Works of Aristotle*. Richard McKeon, ed. New York: Random House.
- Ayer, A.J. 1962. *Language, Truth and Logic*. 2nd ed. New York: Dover Books.
- Churchland, Patricia Smith. 1984. *Neurophilosophy*. Cambridge, Mass.: The MIT Press.
- Churchland, Paul. 1979. *Scientific Realism and the Plasticity of Mind*. Cambridge: Cambridge University Press.
- Clark, Gordon H. 1985. *Logic*. Jefferson, Md.: The Trinity Foundation.
- Cohen, Morris. 1944. *A Preface to Logic*. New York: Henry Holt.
- . 1931. *Reason and Nature*. New York: The Free Press.
- Cohen, Morris, and Ernest Nagel. 1934. *An Introduction to Logic and Scientific Method*. New York: Harcourt, Brace and World.
- Copi, Irving, and Carl Cohen. 1994. *Introduction to Logic*. 9th ed. New York: Macmillan.
- Eakman, B.K. 1998. *Cloning of the American Mind*. Lafayette, La.: Huntington House.
- Feyerabend, Paul. 1987. *Farewell to Reason*. London: Verso.
- . 1975. *Against Method: Outline of an Anarchistic Theory of Knowledge*. London: New Left Books.
- Fitch, Frederic B. [1946] 1952. "Self Reference in Philosophy." *Mind* 55: 64-73. Reprinted in his *Symbolic Logic: An Introduction*. New York: Ronald Press.
- Friedman, Milton. 1991. "Say 'No' To Intolerance." *Liberty* (July): 18.
- Gibson, J.J. 1966. *The Senses Considered as Perceptual Systems*. Boston: Houghton Mifflin.
- Goodman, Nelson. 1979. "The New Riddle of Induction." In *Fact, Fiction and Forecast*. Cambridge, Mass.: Harvard University Press.
- Gordon, David. 2000. *An Introduction to Economic Reasoning*. Auburn, Ala.: Ludwig von Mises Institute.
- . 1996. *The Philosophical Origins of Austrian Economics*. Auburn, Ala.: Ludwig von Mises Institute.
- Hanson, Norwood Russell. 1958. *Patterns of Discovery*. Cambridge: Cambridge University Press.
- Hayek, Friedrich A. 1952. *The Counterrevolution of Science: Studies in the Abuse of Reason*. Glencoe, Ill.: The Free Press.
- Hoppe, Hans Hermann. 1995. *Economic Science and the Austrian Method*. Auburn, Ala.: Ludwig von Mises Institute.
- Jerison, Harry J. "Paleoneurology and the Evolution of Mind." *Scientific American* 234 (January): 92-101.

- Katz, Stuart, and Gordon Frost. 1979. "The Origins of Knowledge in Two Theories of Brain: The Cognitive Paradox Revealed." *Behaviorism* 7: 35-44.
- Kuhn, Thomas S. 1970. *The Structure of Scientific Revolutions*. 2nd ed. Chicago: University of Chicago Press.
- Lettvin, J.Y., H.R. Maturanas, W.S. McCulloch, and W.H. Pitts. 1959. "What the Frog's Eye Tells the Frog's Brain." *Proceedings of the Institute of Radio Engineers* 47 (4): 1940-51.
- Lewis, Clarence Irving. 1960. "The Pragmatic Conception of the A Priori." In *The American Pragmatists*. M. Konvitz and G. Kennedy, eds. New York: Meridian Books.
- . 1956. *Mind and the World Order*. New York: Dover Books.
- Lovejoy, Arthur O. 1922. "The Paradox of the Thinking Behaviorist." *Philosophical Review* 31: 135-47.
- Machan, Tibor R. 2000. *Initiative: Human Agency and Society*. Stanford, Calif.: Hoover Institution Press.
- . 1990. *Capitalism and Individualism: Reframing the Argument for the Free Society*. New York: St. Martin's Press.
- . 1988. *The Moral Case for the Free Market*. Lewiston, N.Y.: Edwin Mellon Press.
- Maritain, Jacques. 1946. *Formal Logic*. New York: Sheed and Ward.
- Maxwell, Nicholas. 1998. *The Comprehensibility of the Universe: A New Conception of Science*. Oxford: Clarendon Press.
- . 1980. "Science, Reason, Knowledge and Wisdom: A Critique of Specialism." *Inquiry* 23: 19-81.
- . 1974. "The Rationality of Scientific Discovery." *Philosophy of Science* 41: 123-53, 247-95.
- Menger, Carl. [1871] 1994. *Principles of Economics*. Grove City, Pa.: Libertarian Press.
- Mises, Ludwig von. 1976. *Epistemological Problems of Economics*. New York: New York University Press.
- . 1966. *Human Action*. 3rd ed. rev. Chicago: Contemporary Books.
- . 1962. *The Ultimate Foundation of Economic Science: An Essay on Method*. Kansas City, Mo.: Sheed Andrews and McMeel.
- Nagel, Thomas. 1974. "What Is It Like To Be a Bat?" *Philosophical Review* 83 (1974): 435-50.
- Quine, W.V. 1969. *Ontological Relativity and Other Essays*. New York: Columbia University Press.
- Rasmussen, Douglas B. 1973. "Aristotle and the Defense of the Principle of Contradiction." *The Personalist* 54: 149-62.
- Rorty, Richard. 1989. *Contingency, Irony and Solidarity*. Cambridge: Cambridge University Press.
- . 1979. *Philosophy and the Mirror of Nature*. Princeton, N.J.: Princeton University Press.
- Rothbard, Murray N. 1997. "New Light on the Prehistory of the Austrian School." *The Logic of Action*, Vol. 1. Cheltenham, U.K.: Edward Elgar.

- Selgin, George A. 1990. *Praxeology and Understanding*. Auburn, Ala.: Ludwig von Mises Institute.
- Smith, Barbara Herrnstein. 1988. *Contingencies of Value: Alternative Perspectives for Critical Theory*. Cambridge, Mass.: Harvard University Press.
- Smith, Barry. 1994. *Austrian Philosophy: The Legacy of Franz Brentano*. Chicago: Open Court.
- . 1990a. “Aristotle, Menger, Mises: An Essay in the Metaphysics of Economics.” In *Carl Menger and His Legacy in Economics*. Bruce Caldwell, ed. Durham, N.C.: Duke University Press.
- . 1990b. “The Question of Apriorism.” *Austrian Economics Newsletter* (Fall).
- Whitehead, Alfred North. 1929. *The Function of Reason*. Boston: Beacon Press.