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PARANOIA WITHIN REASON

John Kadvany

János Radványi is a respected Hungarian essayist and critic who was trained in mathematics, philosophy, and engineering, earns his living in Budapest as an environmental risk analyst, and publishes frequently on pollution, risk, and the philosophy of science. During the 1980s Radványi published a series of controversial articles on the Hungarian emigré philosopher of science Imre Lakatos, who had been a major influence in England and America in the philosophy of science debates associated with Thomas Kuhn, Paul Feyerabend, and Karl Popper. Radványi claims that Lakatos, who died in 1974, developed a covert Hegelian-Marxist philosophy within his English-language publications and that his work is that of a "philosophical mole." While he does not consider himself a Marxist, Radványi found himself *de facto* in the role of intellectual historian of a convoluted, semisecret, and philosophically important strand of nineteenth-century ideas connecting Lakatos, in England, to one of Lakatos's Hungarian teachers, Georg Lukács, perhaps the most influential Marxist philosopher of the twentieth century. Because of conflicts surrounding Marxism during the 1980s arising from both government ideologies and Hungarian intellectuals, and Radványi's need to protect his professional role as a government policy analyst, he chose to publish much of his work on Lakatos through his collaborator John Kadvany, who has lived in the United States since the failed 1956 Hungarian Revolution. George Marcus learned of Radványi's tangled, cross-cultural intellectual life and his theories about Lakatos's covert Hegelianism through Kadvany, who arranged the following interview. The interview was held in February 1996 when Radványi was on a short visit to New York. To facilitate the dialogue, many questions were scripted in advance, and Radványi worked on the final text with Marcus and Kadvany after the interview to clarify his responses.

THE EXTRATERRITORIALITY OF IMRE LAKATOS:
A CONVERSATION WITH JÁNOS RADVÁNYI

Something I owe to the soil that grew
More to the life that fed
But most I owe to Allah
Who gave me two
Separate sides to my head

—Rudyard Kipling, *Kim*

KADVANY: János, you've written for several years that Imre Lakatos, the Hungarian emigré philosopher of science, was a philosophical mole. What does this mean?

RADVÁNYI: There's a two-fold reading possible of Lakatos's philosophy of science and mathematics. In one, he's the culmination of his mentor Karl Popper's "critical rationalism," and a rationalist defense to the more free-wheeling ideas in philosophy of science of Paul Feyerabend and Thomas Kuhn. In the second reading there is a covert Hegelian at work, creating a historicist response to problems of scientific and mathematical method that is analogous to Marx's historicization of nineteenth-century political economy. This is a type of rationalism, also, but one is that historicized and temporally specific. The methodology of modern science, for example, essentially didn't exist before the end of the Renaissance for Lakatos. At the same time, he gives a characterization of scientific criticism that implies its own historical transience.

KADVANY: Has anyone else noticed the Hegelian side of Lakatos's work?

RADVÁNYI: In Feyerabend's best-known book, *Against Method*, he calls Lakatos a "Trojan horse," and often noted, though without elaboration, strong Hegelian themes in Lakatos's philosophy. After Lakatos died, both Marx Wartofsky and Ian Hacking described Hegelian undercurrents in Lakatos's work. I'm not sure any of them recognized the seriousness of the whole enterprise.

KADVANY: And what enterprise is that?

RADVÁNYI: Lakatos was writing during the 1960s and early 1970s. Anglo-American philosophers, who were Lakatos's main audience in England and the United States, were barely able to deal with the idea that problems of scientific method were problems of history, or that scientific method was intrinsically a historical phenomenon. Lakatos had lots of innovative ideas about how to tackle these issues, but they had to be introduced under a sedate philosophical cover. Popper's "critical rationalism" and his notion that scientific theories aren't justified but rather are subject to "falsification" provided the springboard in England.

KADVANY: Could Lakatos have done this with anybody's ideas? What's special about Popper?

RADVÁNYI: Popper, through *The Open Society and Its Enemies*, along with other works, was a famous critic of Hegel and Marx, but many of Popper's ideas have an inchoate Hegelianism about them. For example, falsification is a fundamental principle implies, as Popper saw, that scientific progress, rather than being due to the inductive collection of facts, is created through a process of "negative" criticism, and theories are potentially always in flux. You quickly are led to expect some kind of temporal view of scientific change, which is absent in Popper, and then to ask what the status of falsification itself is. Is it a historical idea? How would you express that? Popper thought he'd solved the "problem of induction" through the logical asymmetry of falsification—that while you can never prove a theory, you can refute it and replace it with an improved version. That idea turned out to be assailable, as it doesn't say enough about how successive theories cohere or fail to cohere over time or why some contradictions get ignored while others become refutations. Lakatos saw the technically sweet problem of historicizing Popper and made it his own. There's also the delicious irony of Lakatos building up a Hegelian view of science in Popper's own house, a house that was entirely unfriendly to Hegel and Marx. Popper loved to ridicule Hegel, such as in an early essay called "What Is Dialectic?" in which he essentially says that Hegel believes in contradictions, and logic shows from a contradiction that you can deduce anything, therefore Hegel is nonsense. With Lakatos, the crows come home roost. Popper, in spite of his antipositivist ideas, made formal logic and the law of noncontradiction sacrosanct, as if people can't function knowing some theory they have of the world contains inconsistencies. It's a refusal to recognize reflection in knowledge, that we can think and talk about our theories even as we use them.

KADVANY: What are the key Hegelian elements in Lakatos's work?

RADVÁNYI: The unifying issue for Lakatos is historiography, whether historiography of mathematics or of science. How we understand scientific or mathematical reason is the historical problem of how to reconstruct these sci-

jects' pasts, and not just for the historian, but for scientists and mathematicians themselves. Whether you're a scientist or a philosopher of science, you are always involved in some reconstruction of the scientific or mathematical past. In Lakatos's principal mathematical work, published posthumously as *Proofs and Refutations: The Logic of Mathematical Discovery*,¹ the goal was to demonstrate the specific historical achievements of nineteenth-century mathematics and how these led to the revolutionary theories of modern logic which we have today. Lakatos accomplished this goal by writing a kind of mathematical *Bildungsroman*, being the historical odyssey of a single famous theorem, Euler's theorem, on polyhedra, through its many nineteenth-century formulations and proofs. The journey of Euler's theorem is intended to be representative of nineteenth-century mathematics as a whole, and recreates, as Georg Lukács might put it, "the mathematical present as history." *Proofs and Refutations* is written as an enormously complex historical dialogue among eighteen characters, each representing a characteristic position mostly from nineteenth-century mathematical method. There's also an elaborate footnote apparatus in which Lakatos uses actual history to provide a counterpoint to the historical reconstruction taking place in the dialogue "above." Historiographically, *Proofs and Refutations* is Hegel's *Phenomenology of Spirit* in miniature, but focused only on modern mathematical history. Hegel's *Phenomenology* is also a reconstructed history based on the *Bildungsroman* form, and makes historical and cultural education not just another category of experience, but the basis for the growth of knowledge. While Hegel's "hero," the subject and object of *Bildung*, or historical education, is a generic philosophical consciousness, Lakatos's "hero" instead is a nineteenth-century mathematical theorem. The bond between Lakatos's historical claims and historiography then is expressed through his remarkable historiographic style, his rewriting of mathematical history. The point is to show how mathematical methods get built up through historical change but in mathematics itself, the book, after all, simply also is just the proof, or proofs, of a single theorem. It's the first sustained account in the history of ideas of mathematical reasoning as a constructive, historical process.

KADVANY: So there's a closer affinity to Hegel than to Marx in Lakatos's philosophy?

RADVÁNYI: Very much so, in that he's trying to explain the historical basis for big chunks of mathematical and scientific methodology, but without a reductive invocation of materialist, psychological, or sociological claims. Not that such categories are historically irrelevant, but that external explanations can be misguided by impoverished theories of mathematical reason. There's a naive response that has to be guarded against here, namely, that this return to Hegel contains the same idealist flaws that Marx criticized. But part of Lakatos's program is to reinvent our ideas about rationalism, by creating a

philosophical alternative to both formal logic and social psychology. The totality of scientific and mathematical discourse becomes another common subject in Lakatos, especially when you try to sort out his personal relationship to the ambiguous and diabolical legacy he left behind. He was no Hegelian.

KADVANY: What is the method of proofs and refutations?

RADVÁNYI: It's a detailed account of the idea that some mathematicians are invented, meaning that informal decisions are made regarding types of mathematical entities the theorem should be about, the types of restrictions that need to be made to make the theorem true, and the scope of the theorem's applicability. These conditions, according to Lakatos, often come about through a historical process involving recognizable heuristic changing and modifying a proof in order to improve it, especially by iterating Popperian counterexamples or potential counterexamples. What is interesting philosophically is that the method of proofs and refutations exist until about the middle of the nineteenth century. *Proofs and Refutations* is the story of its emergence and the consequences for modern mathematics.

KADVANY: What happens to formal logic in Lakatos' philosophy of mathematics? That's part of modern mathematics, and it's all but taken over by philosophy. Is the idea that mathematics is contingent?

RADVÁNYI: *Contingent* may not be the right word, but certainly Lakatos argued forcefully for the historicity of modern methods of mathematics: proof, and that they emerged only in the mid-nineteenth century. My reading of *Proofs and Refutations* is that Lakatos was outlining a historicist position for modern mathematical logic, an historicist account of the skepticism became explicit in Kurt Gödel's famous incompleteness theorems and the considerable aftermath. It's only an outline in Lakatos, though. *Proofs and Refutations* is mostly about the changes going on in nineteenth-century mathematics, not its sequel. The main idea Lakatos delivers about modern logic is that mathematical logic itself is continuous with the rest of informal mathematical theory; it's not a formal calculus itself, but is a formal mathematical theory about mathematics being a formal calculus, and makes use of the same historical methods used in other parts of mathematics. Perhaps Lakatos's ideas are not so radical now that we have chaos theory, fractals, nonlinear dynamics, and computer-assisted proofs. The four-color theorem, for example, which says every map needs only four colors to distinguish adjacent regions, was proved several years ago using computers in an essential way.

KADVANY: Lakatos's philosophy of mathematics is not as well known though, as his philosophy of science. What's the relationship between the two?

RADVÁNYI: Lakatos turned to philosophy of science after taking his

the early 1960s at the London School of Economics, through his relationship with Karl Popper. Popper was Lakatos's new mentor, and the LSE was at the center of the philosophy of science debates which changed philosophy, the humanities, and social science as a whole since then. Popper's starting point was normative, like the positivists', in that he wanted to evaluate competing characterizations of scientific practice by asking what should "count" as science and what shouldn't. Again, as he'd done in *Proofs and Refutations*, Lakatos ultimately made the problem into one of historiography: what is your methodological conception of science's past, and how good an account does that give of science's history? Histories of science become "experiments," so to speak, against which philosophy of science is judged. At the same time, philosophies of science, if they are worth anything at all, should provide interpretive heuristics by which to build histories. And if you can't reconstruct "enough" history as science which you think should be science, that's a problem for your methodology. To invoke Lakatos again, actual history is the yardstick against which philosophical histories are measured, while philosophy provides normative criteria for evaluating science's past. For Lakatos, methodology becomes wedded to history because methodology is nothing but the rational reconstruction of history.

KADVANY: Isn't this just privileging scientists' accounts with an historicist ideology?

RADVÁNYI: Lakatos, like Feyerabend and Kuhn, wanted to get philosophy closer to scientific practice, so the possibility is there. He also made clear that his role was to criticize science and its histories from a value-laden perspective for "lack of rationality," which he frankly described as how science "ought to have gone"—so Lakatos is not a complete Hegelian, he's quite willing to give critical philosophical advice giving direction to the world. Popper began with what he took to be the scientific pretensions of Marxism and Freud, and Lakatos also takes up this demarcationist starting point, which tries to characterize "science" and "nonscience." But where it ends is different from what Popper envisioned. The projected title of a book Lakatos planned before his death was *The Changing Logic of Scientific Discovery*, instead of Popper's static *Logic of Scientific Discovery*. It wasn't just that scientific "facts" might change because they were theory-laden, which even Popper recognized, nor just that theories were changing through criticism and falsification. Methodological standards for science as a whole were the result of historical developments following the Renaissance, nothing ultimately justified that these standards got you closer to the Truth, and the whole shape of scientific reason itself was subject to change. Making *that* point, and *how* he made that point, is the key to Lakatos's internal attack on Popper. It also shows the importance of keeping friendly with science, since that gives Lakatos's historicist case a kind of empirical corroboration.

KADVANY: What happens to science before the Renaissance?

RADVÁNYI: It's a huge blind spot for Lakatos, one that Feyerabend exploited with impunity. Science before Galileo is almost prehistory for Lakatos. While Aristotle is a first-class methodologist, especially for biologists and even decision analysts, he doesn't fit Lakatos's scheme at all. There's no way out except to accept the limited scope of Lakatos's project in the history of science.

KADVANY: Hadn't Thomas Kuhn essentially established that science was a constructive, historical process in *The Structure of Scientific Revolutions*? Some people see Lakatos as a swan song for Popper's "critical rationalism," a last defense against Kuhn's followers, or at least the epigone.

RADVÁNYI: In its obituary for Kuhn in 1996, the *Observer* of London wrote that Kuhn was philosophically tone-deaf, and that's just right. Kuhn popularized many good ideas, like "paradigm" and "incommensurability," but his philosophy was largely history teaching by example. He never dealt effectively with the enormous problems he raised of language, perception, historical interpretation, skepticism, relativism, and the normative status of science. Feyerabend and Lakatos were all the time building their own historical philosophies and historical vignettes which really addressed these issues. Others in the Anglo-American philosophical community paid scant attention to historical problems, since they were historically tone-deaf, just as Kuhn was philosophically tone-deaf. Lakatos's methodology of scientific research programs, as he called it, was a clever implementation of Hegelian ideas to put reason into historical motion, and his conversion was partly a response to an intellectual immaturity of the philosophical community of the 1960s and 1970s, *vis-à-vis* history.

KADVANY: Do you mean "covertiness"? What's a "conversion"?

RADVÁNYI: It's a shorthand to distance Lakatos the person from the body of work he left behind. The "conversion" is the product itself, the pattern of ideas we observe in his philosophical essays.

KADVANY: How does Lakatos's idea of a research program work? How does reason get a historical character?

RADVÁNYI: First, science is not built up just out of theories, but larger units Lakatos called research programs, which are series of theories evolving in time, replacing one another, and loosely unified through a "hard core" of assumptions at the heart of the program. The hard core provides a kind of metaphysics for the program, without which the program falls apart. A research program at any time has a past which it is trying to improve upon, and competing programs to fend off. It is awash with contradictions, anomalies, and puzzles. Those participating in the program try to make novel predictions, some of these predictions may be corroborated and others refuted. A research program is not also just a series of interpreted observations and theories, there

is a "positive heuristic," or set of promising ideas, for generating new models or observational theories which move the program forward; likewise, there is a defense structure of "negative heuristics" for fending off criticism from competitors. Since a research program includes what could be taken as "falsifying" anomalies or contradictions, it already takes a major step beyond Popper by allowing science to progress on inconsistent foundations. A research program usually can't be refuted or proved by an isolated experiment or fact, as the reasons for rejection or acceptance or programs involve a more extensive mosaic of the program's competitors, their relative progress or degeneration, and the changing status of supporting observational and mathematical theories. There's no single refutation or corroboration which makes or breaks a program's success, in direct opposition to Popperian falsification. In this way, research programs become the basic building blocks for science as a holistic and temporal process. Research programs are also science in science's own languages, not the philosophical language of formal logic, what Feyerabend derided as a "pidgin" language as far as scientific practice was concerned. For example, if informal science contains contradictions and you translate these into formal logic, you get garbage; but that's the fault of the translation, not the original informal knowledge. There's a deep point being made here by Lakatos about language and history, that the flexibility inherent in nonformalized discourse is essential for scientific criticism, and for reconstructing progress and degeneration in the scientific past. If you insist on fitting too much into a formal model of theory change, you risk eliminating science at least as we know it. Logical positivism's legacy to always think in terms of formalized and static theories turns out to be an enemy of criticism and the growth of knowledge. Though Lakatos liked to deride Kuhn's "incommensurability" for its "irrational" overtones, he was keen to point out the importance of language change in science, and the impossibility of representing historical science or mathematics in a fixed formal language.

KADVANY: Why wouldn't Popper welcome all this as an elaboration of his idea that you don't prove theories, you propose them and maybe refute them, the winners being the ones which resist refutation the longest?

RADVÁNYI: Once Popper had raised the idea that theory progression is fueled by contradiction, but without wanting to make the next natural step to an historicist approach, he was led to a Kantian defense against dialectical arguments, in which the law of contradiction, of "not: *P* and *not-P*," is sacrosanct. For Lakatos, what counts as refutation or "falsification" turns out to be a historical and constructive problem for specific research programs. Research programs have contradictions all over the place, so there's never any simple confrontation of theories and facts. "All theories are born refuted," Lakatos liked to say, which is his sanitized version of Hegel's conception that "the

true always contains the false." This means for Lakatos that there can be no genuine "crucial experiments," no single confrontation of a theory with falsifying "accept" versus "reject," so, as Hegel says, "the true is the who as well. The temporal perspective is introduced by Lakatos's numerous arguments that criticism often occurs after the fact, with historical hindsight, not through crucial experiments intended to make or break a theory in advance conducting an experiment or study. Falsification and logic in isolation get diminished status, and Popper's half-logicist and half-critical position is seen to be not at all adequate to scientific practice. The Hegelian idea that reason retrospective and constructive, that history is built into scientific practice itself, is anathema to Popper because it makes science depend on so much more than classical logic.

KADVANY: But there still is a strong Popperian side to Lakatos, in that he doesn't reject Popper entirely.

RADVÁNYI: Popper's negative perspective of science through criticism, falsification, and the overall evolutionary perspective of science are still there. Lakatos's relationship to Popper is that he doesn't reject anything wholesale his philosophy is built up dialectically out of Popper's and others' ideas. Lakatos's constructive approach to building his own philosophy is a Hegelian trademark which you also see in a synthetic philosopher like Habermas, but this criticism and elaboration of Popper is intended to illustrate the same transformations of ideas which occur in science.

KADVANY: Even if research programs give science a historical character what justifies them? It still sounds like you've traded in one Popper for another, even if a more sophisticated and liberal one.

RADVÁNYI: You've repeated one of Feyerabend's criticisms of Lakatos, he has moved the problem of justifying science without solving it, or accounting for its origins in a noncircular way. There's ultimately no answer to this skeptical attack. Lakatos said himself that modern science is a new way of replacing one body of knowledge, one research program, with another, and that this activity was created after the Renaissance. Ian Hacking says Lakatos tried to create a nonrepresentational theory of scientific progress, but even that's probably too generous. Lakatos was not an epistemologist in the traditional sense of asking how knowledge links up with the world.

KADVANY: What then is the bottom line for philosophy of science as far as Lakatos is concerned?

RADVÁNYI: It's not only that Lakatos argued that scientific methodology was in flux, it's that there is a changing logic of scientific method, and he demonstrated that idea *in media res*. The methodology of scientific research programs itself consists of a series of reconstructed philosophical theories, including several versions of Popper's ahistorical falsificationism; this series culminates in Lakatos's historicized research programs which in turn is ap-

plied to various episodes in the history of science; *all* that finally just becomes both more history and a reconstruction of method. You are supposed to see and experience how science's *passi* gets built out of a conception of scientific method, how that conception contains its past, its own contradictions, and positive heuristic, and consequently how Lakatos's theory and reconstructions themselves will become historical moments eclipsed and absorbed by other historical reconstructions. Like Lukács's account of Marxism, or Hegel's account of his own philosophy, the theory of research programs is placed in history as a transient theory of scientific method. This active demonstration of the present in history is more important than the details of Lakatos's historical reconstructions, such as his account of the Michelson-Morley experiment and its role in the theory of relativity, or his account of Newton's criticisms of Descartes, and the rest. Unfortunately, you have to get this from Lakatos's work firsthand, like understanding a mathematical proof; no abbreviated summary reproduces the effect. I believe both Hegel and, later, Adorno, made the point that certain philosophical ideas resist summarization, and Lakatos's changing logic is one of them.

KADVANY: There still must be some basic idea behind his "changing logic." How is it done?

RADVÁNYI: Lakatos developed a historiographic metatheory laying out criteria for assessing the fit of philosophy of science against so-called actual history, which turns out not to be "actual" in a naive sense, but a name for theory- and value-laden history: the theory being your methodological theory of science with an accompanying value structure implied by what's "good" or "bad" science. This historiographic theory is just the theory of research programs itself, but applied to Lakatos's own development in the philosophy of science and his historical conjectures. By applying the theory of research programs to itself, science literally becomes historiography, with its own historiographic refutations, corroborations, theory-laden historical facts, positive heuristic, and the rest. These criteria for evaluating history and methodologies constitute an elaborate self-application of research program categories to Lakatos's own enterprise in the philosophy of science. Lakatos shows himself to have his own historiographic research program, which "progresses" over Popper's implicit program, and is also subject to change and supersession—a type of Hegelian *Aufhebung*.

KADVANY: There appears to be an affinity between Lakatos's ideas and those of postmodern thinkers concerned with history and historiography. How do you explain the late twentieth-century flavor to it all, of Lakatos's reflections on texts and historical discourse?

RADVÁNYI: Feyerabend once made the apt comparison of Lakatos with the famous American philosopher Quine, saying that Quine was to Lakatos what Robert Hooke's "discovery" of the gravitational law was to Newton's.

KADVANY: Meaning that?

RADVÁNYI: Meaning that Hooke just guessed at the gravitational law, he had no explanation of why it should be true. Similarly, Lakatos dealt continuously with real historical problems, he wasn't just reciting generalities or reacting against positivism without useful examples or applications. Lakatos didn't just describe the theory-ladenness of all historical writing, he *demonstrated* it through *Proofs and Refutations* and his various "rational reconstructions" of episodes from the history of science, such as whether the Michelson-Morley experiments on the speed of light functioned as Popper's crucial experiments. Ian Hacking has done a good job criticizing some of Lakatos's history of science, including what he wrote on the Michelson-Morley experiments, but it's still important to see how Lakatos writes his vignettes, how ostentatiously he lays out his rearrangement of historical "facts," his "actual history," and the methodological categories he uses to interpret the past. And nobody did this in the history of mathematics, as Lakatos did in the 1950s. Lakatos was way ahead of his time, though many of these modern ideas on historiography are well expressed in Hegel's lectures on world history.

KADVANY: But is there any such thing as "actual history"? That's another positivist dogma.

RADVÁNYI: No, there is no actual history, that's the point; you just aren't hearing the ironic quotation marks. We're always reconstructing the past in a type of hermeneutic circle. But you have to settle conventionally, for some time, on some historical "facts," otherwise you can't write or think, you end up in a skeptical regress, and ultimately a skeptical abyss.

KADVANY: It still sounds a bit like history of ideas spiced up with a lot of clever dialectics.

RADVÁNYI: If you are asking whether Lakatos is just a virtuoso, to a certain extent in the philosophy of science, the answer is yes, without denying a profound pedagogical value. You should keep in mind how forcefully he attacked Popper's idea of crucial experiments in science and argued for the backward-looking, historicist dimension of science itself. On the other hand, in the philosophy of mathematics, since mathematics is not much more than its methods and theorems, being "just" a historical and methodological virtuoso means you're at the center of the subject. Ultimately, Lakatos was a greater philosopher of mathematics than a philosopher of science; the design of his changing logic of scientific discovery is, I agree, overingenious.

KADVANY: Is there a precedent for Lakatos's self-application to create his changing logic?

RADVÁNYI: The idea of changing method was one of Lukács's key ideas about Marxism in *History and Class Consciousness*, that Marxism itself had to be seen as an historical theory, that it had its own history, and was su-

ject to change. While Lukács got into a lot of trouble with Lenin and others for this idea, it was overshadowed by everything else in *History and Class Consciousness* about reification and the role of consciousness in Marx, plus Marx's great unacknowledged debt to Hegel. That was the real beginning of Western Marxism in the 1920s. The skeptical trope of self-application was almost a trivial idea from Lukács's Hegelian perspective, since that's always the Hegelian move, to turn the subject of history into its object, and vice versa. If you see the understanding of these subject-object relations in history as the heart of Hegelianism, then Lakatos takes it to the fore as far as science and mathematics are concerned: whether it's between a theorem and its proof, a proof and its history, scientific theories and observations, research programs and theories, or finally historical reconstructions and research programs. But the difference in Lakatos is a change from *who* is the subject of history to *what*.

KADVANY: Does the critical dimension of Western Marxism have more than a passing relation to Lakatos's criticism of Popper?

RADVÁNYI: Lakatos's sequential critique of Popper is a presentation of a system, and simultaneously through his presentation a critique. The development combines the action of thought with its criticism, so that the forms of thought themselves become an object of investigation. Of necessity, it's a historical approach.

KADVANY: That's nicely put.

RADVÁNYI: I'm quoting Marx or Hegel almost verbatim, I can't recall which. What did Lukács say? "Every quotation is an interpretation." There's no lack of disguised reference in Lakatos, but you find that in Hegel's *Phenomenology* as well.

KADVANY: Is there an "end" to history of science in Lakatos, a Hegelian integration of subject and object?

RADVÁNYI: Definitely not. There's no "true" scientific consciousness in Lakatos, and historical reconstruction is always imperfect. Lakatos knew enough not to repeat some errors of the past.

KADVANY: Is this self-application the central Hegelian theme of Lakatos's research program approach?

RADVÁNYI: The central theme is the retrospective stance of historicism, of methodology as reconstructed history. There is also the wide-ranging holism, and the omnipresence of contradictions. The self-application synthesizes all these ideas and places them in a temporal framework which unifies science and its history. As I said, while you have to read Lakatos's work somewhat carefully to get this entire picture, it's clear that this dialectical construction, in which the theory of research programs becomes self-conscious, so to speak, through its self-application, was deliberately planned from the start.

KADVANY: The start?

RADVÁNYI: In 1965 a conference was held in London featuring Kuhn, Lakatos, Feyerabend, and other philosophical luminaries. Quine autobiography, presents the conference as a demolition of Rudolph and late positivism, but he misses the point. It extended the revolutionary had started with the publication of Kuhn's *Structure of Scientific Revolutions* and which was to spread new ideas about scientific method and the history into social theory, anthropology, even literary criticism. The conference papers were published by Lakatos and Alan Musgrave in *Critical Theory of Knowledge*, which became a bonfire of controversy. I spread about incommensurability as an idea associated with Kuhn and Feyerabend, along with new problems about relativism, perception, and Lakatos was seen as a major innovation over Popper, apparently not as Kuhn and Feyerabend, but injecting similar detail about actual scientific practice. But returning to Lakatos's exposition of his ideas, looking at Lakatos's lengthy essay in *Criticism and the Growth of Knowledge* objective of creating a reflexive methodology, the changing logic, is apparent in the footnote apparatus. That's always where the action is in Lakatos.

KADVÁNYI: There's something special about his footnotes?

RADVÁNYI: The footnotes are first of all used, when Lakatos is revealing some piece of history of science or mathematics, to comment on terms of the reconstruction and compare what so-called actual history did" compared to the reconstruction. That technique is most spectacularly exploited in *Proofs and Refutations*. There's a creative tension created between the historical record and historical interpretation that is one of Lakatos's most thoroughly worked-out accomplishments. Marx did something similar with his footnotes, too, as noted by Engels in the preface of the later editions of *Capital*. Marx uses his footnotes to relate economic history to his dialectical conception of capital, just as Lakatos relates method of proofs and refutations to nineteenth-century mathematics constructed scientific research programs to actual history. At the same time Lakatos's footnotes are used to carefully comment and modify the cross-reference ideas without being too explicit. Feyerabend knew what he was going on: the title page, of all places, for the first edition of *Against Feyerabend* has the title footnoted, which is just another semiprivate joke with Lakatos.

KADVÁNYI: But why isn't Lakatos's covertness—excuse me, "covertness," or obviously not there?

RADVÁNYI: Lakatos was a brilliant and seductive writer, and he used the footnote apparatus to link essays published in different journals, make suggestions, and carry out discussions. You just have to pay attention to this is also a conversion, not a hide-and-seek. A concealment fails if it doesn't have a definitive clue.

KADVÁNYI: Does someone finally win in the Kuhn-Feyerabend-Lakatos debate?

RADVÁNYI: If the criterion is who had the widest influence, it would be Kuhn, though few people could make complete sense of "paradigms" and "incommensurability," or their variants. Nonetheless, you get 80 percent of the ideas for 20 percent of the effort from Kuhn. It's sort of an engineer's solution to huge philosophical and historical quagmires; that's also why *The Structure of Scientific Revolutions* has sold a million copies. Philosophically, in terms of what is "best" for science, the winner might be Feyerabend. He was most alert to normative and descriptive implications for scientific practice, and really was a champion of science, even more than Lakatos; he just didn't care for its calcified and authoritarian versions. What Lakatos provides is a powerful calculus for reconstructing the history of science, much richer analytically and more carefully thought through than Kuhn's paradigms, or whatever other *Weltanschauung* "unit" you choose. Lakatos also shows you can be "rational" while violating lots of traditional rules—that's why Feyerabend saw him as an ally—which shows the rules are just bad models, norms, and descriptively, of scientific practice. Lakatos wins the debate if the goal is to come up with the most creative and liberating conception of rationality, one that is a changing logic, a self-modifying rationality. It's also relatively straightforward to apply the theory of research programs to history, and that's been done in chemistry, physics, geology, and economics. There really is a positive heuristic in Lakatos's historiography.

KADVÁNYI: Lakatos would appear to be as radical in his own way as Feyerabend, just not as upfront about it. Does their work relate in any deeper way, or are they just both renegade progeny of Popper?

RADVÁNYI: Both make use of the tropes of ancient Pyrrhonian skepticism, and both take refuge in a type of constructive skepticism popular among many scientists from the Renaissance to today. Both use classic skeptical gambits to enforce the position that science has no foundations, while believing that a vigorous historicist sensibility is the best means of coping with radical skepticism; hence both could be great critics and admirers of science. Feyerabend integrated his skepticism with a mix of anthropology and history. The title *Against Method* refers to the Greek skeptics and many "Pyrrhonian" texts of Sextus Empiricus, including "Against the Logicians," "Against the Physicists," "Against the Mathematicians," and so on. Feyerabend wanted to show the varieties of reason and knowledge, and he used skeptical analyses of all kinds of traditions and scientific theories to demonstrate that. Feyerabend's approach didn't add up to anything grander, but that's what he wanted; epistemological options were just all laid out, and it was a value choice of which way a society proceeded. Like a true skeptic, he acknowledged the varieties of epistemologies possible in the world, but he mostly suspended judgment on whether any one was better or worse. For Feyerabend, history plus skepticism did not have to lead to a dialectical approach; an eclectic anthropology was good enough. Lakatos also understood skepticism, and his main use of it was

the "self-application" of the methodology of scientific research program itself, which is an old skeptical gambit, called the peritrope, or "turn it tables." These skeptical tropes also occur, though, in Hegel and Marx designed them into his so-called "phenomenological method," meaning historiographic rules for his *Phenomenology*, so it's no coincidence that Lakatos can develop an antifoundational and skeptical account of modern mathematics in *Proofs and Refutations*. When Marx took over Hegel's cal-historical method, even as he brewed in a materialist metaphysics, willy-nilly appropriated skeptical tropes Hegel had used for reconstructing history of Western philosophy. It's kind of a secret "Pyrrhonism becoming historiography" that Marxists and many historians don't acknowledge, probably because of an antipathy toward even a constructive or mitigated skepticism. Lakatos probably knew how his application of Marxism to itself in *Hilts and Class Consciousness* was related to skepticism, but I don't know if it was ever explicit about his use of Pyrrhonism's dialectical acids. He didn't need to make Marxism any more flexible than he'd done already bottom though, the skepticism at the heart of Hegel's historiography is total to Marxist criticism, and is implicit in Lukács's reinvention. The skepticism built into Hegel's characterization of human consciousness near Lakatos that skepticism is lurking within every historiographic frame.

KADVANY: Feyerabend and Lakatos, then, take skepticism in two directions.

RADVÁNYI: Lakatos wants a tidy, dialectical structure, something with unity, lots of analysis and synthesis. Feyerabend is an anthropologist, cultures and rationalities of the past and present, an historicized Wittgenstein of the *Philosophical Investigations*. Feyerabend and Lakatos were also closest of friends. They communicated almost daily until Lakatos's death. *Against Method* was to have been published with a reply from Lakatos but was sadly never written. Some of the Feyerabend-Lakatos correspondence has been published in Italian.

KADVANY: When did Lakatos die?

RADVÁNYI: In 1974. Then Feyerabend died in 1994, as did Popper, died in 1996.

KADVANY: Did Lakatos know Lukács in Hungary?

RADVÁNYI: Lakatos was one of Lukács's first-generation students in World War II, when Lukács returned to Hungary after an absence of a few decades. Other students around this time included Agnes Heller and Imre Fehér, who became well-known as critical theorists. At a public debate in Hungary with the philosopher of science Jerry Ravetz in 1970, Lakatos aside that it was his original goal to be a successor to Lukács, but such a goal was forgotten as Lakatos's fame and influence grew. He took a

tial façade of virulent anti-Marxist rhetoric in the role of Popper's most devoted disciple, liberated by Popper, as he said, from a Hegelian outlook which held him captive for over twenty years. At one point he was wearing "Agnew for Vice President" buttons. He's like a character out of a Graham Greene cold-war spy novel. He may well have been anti-Marxist in terms of hating Hungarian Stalinists, I am sure; but that's not inconsistent with a complete Hegelianism or even Hegelian-Marxism. Something like the Agnew button was worn, no doubt, with ironic bravado, too. Lakatos fought his bitter wars in a Hungarian style, maintaining a joking relationship with all his enemies.

KADVANY: There are some intriguing crosscurrents here. Feyerabend almost once worked for Brecht, while Lakatos was a student of Lukács.

RADVÁNYI: Brecht and Lukács also engaged in a famous debate, with Brecht taking a more tolerant attitude toward aesthetic theory—at least as certain modernist trends were concerned—than Lukács's demand for a more unified and systematic approach, so there's even a superficial similarity between some of the themes of the Brecht-Lukács debate and Feyerabend's criticisms of Lakatos.

KADVANY: Did Lakatos achieve his goal of becoming a successor to Lukács?

RADVÁNYI: Absolutely. All the Hegelian elements that matter in Lakatos's work are present in Lukács: Historical education as *Bildung*, Hegel's *Phenomenology* as a *Bildungsroman*, the central role of historiography in historical philosophy, self-application as a trope to temporalize just about anything, antiromanticism and antileftism, the autonomy of language in exteriorizing human consciousness, the intricate subject-object relations in historical thinking. Regardless of his other ideas, Lukács provided one of the more attractive versions of Hegel to appear in this century, and Lakatos made systematic use of this interpretation in all his work. In English-language countries, Lukács's account of Hegel was popularized through the late Walter Kaufmann, who read Lukács in German before Lukács's books started to be translated into English in the 1960s; so it's not as if these ideas were unknown.

KADVANY: What is the antiromanticism and antileftism you say is shared by Lakatos and Lukács?

RADVÁNYI: At the time the *Phenomenology* was published, Hegel positioned himself as a critic of the romantics, mainly Schelling. The *Phenomenology*, with its pervasive idea of *Bildung* as historical self-education, is intended as an exoteric guidebook to philosophy, in opposition to any kind of intuitionist, nondiscursive philosophy. For years, these pedagogical themes in Hegel, which continue earlier ideas of Goethe and Lessing, were used by Lukács as a covert critique of Stalinism. You can see in Lukács's writings over decades an obvious parallel between Stalin's personality cult and the intuition-

ism of romanticism, with Hegel's antiromantic critique being a covert pro Lukács's Hegelian Marxism. These ideas came about during the 1930s, Lukács lived in the Soviet Union, and then continue after Lukács's return Budapest at the end of World War II, and up to the 1956 Hungarian uprising between 1945 and 1956 is known for its own personality cult: rigidly élitist political and police hierarchy, which some say was the minimalist in its political culture of all the satellite states. Lukács's parallel or between irrationalism and Stalinism was not only correct, it was heroic, the first suggestion of the idea that Marxism ended up as Stalinism through a macabre turn of history. In Hungary Lukács wrote at length about the de-creation of Western philosophy into intuitionist irrationalism and even featured in his *Destruction of Reason*, published in 1954; Lukács parrots Lukács's inflammatory rhetoric—Adorno spoke of the destruction of Lukács's reason almost perfectly in polemical essays written just before his death and in he attacks anything in the philosophy of science suggestive of "tacit knowledge" or other nondiscursive practices in science. *Proofs and Refutation* provides a less shrill and more reasoned critique of intuitionist or esoteric itegies in mathematics, and is right in line with Lukács's and Hegel's accusation in the *Phenomenology's* goal of making philosophy publicly accessible to and not just a fortunate élite of initiates.

KADVANY: Something doesn't quite fit here. Lukács was always a believer in "vanguard" theory, the idea that there was a subject of history whose consciousness and understanding of events was clearer, ultimately more accurate and providing a justification for leadership, even perhaps of a dictatorial and Lukács. Lukács had to recognize as élite leaders those scientists who end up leading the development of progressive research programs. How is a vanguard can be identified without circularity, say, for purposes of tabling a degenerating research program, ultimately brings you back to the same problem of justifying leadership and choice as raised by Leninism. Lukács created a critical theory of scientific discourse through which the value judgments of the "élite" could be criticized by seeing how their research programs stacked up. One could, for example, consider to what extent climate change research programs are "progressive" in Lukács's sense. Nonetheless, there still is a hint here of one moral and epistemological antinomy embedded in philosophy of science disputes that gets exposed through Lukács's dialectics.

KADVANY: Lukács's close ties to Lukács and his use of Hegel would put him in a tradition of covert Hungarian Hegelian-Marxism.

RADVÁNYI: Exactly.

KADVANY: Who else participates in this covert tradition?

RADVÁNYI: I don't know. But Lukács and Lukács are surely the most in

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portant twentieth-century Hungarian philosophers, and through such a strange and convoluted relationship.

KADVANY: What does Lukács's conversion imply for the history for Marxism, especially the Western Marxism started in part by Lukács? Does Lukács's work feed back into this tradition?

RADVÁNYI: Regardless of your views on Marxism, there's an important old problem about the relationship between dialectical reasoning and science. Is dialectical reasoning just fluff, or does it have some substantive role in the sciences? Much of Marxism is the story of this debate. Engels, in part following Hegel, deified his famous dialectics of nature as one response, which we even see revived today through reputable physicists such as the late David Bohm, but simultaneously reviled as vulgar Marxism by critical theorists. But Lukács was not interested in a diamat-style "reason submerged in nature," he showed there was a role for dialectical reasoning in the historical progress of theories of nature. Lukács completely explains the role of dialectical reasoning vis-à-vis science, in a way that lets you "keep" what you ordinarily recognize as science, and not try to create a specious metaphysics. Lukács's achievement is considerably beyond what Habermas or other critical theorists tried to achieve in terms of reconciling criticism and positive scientific knowledge. Lukács showed that science was at bottom historicist and critical; that was his solution avoiding both scientism and dialectics as ornament. In a way, it's an answer to the debate between scientistic and dialectical philosophies of science going back to Parmenides and Heraclitus.

KADVANY: What about Marxian economics? Does Lukács's theory of research programs say something about whether Marx's economics is "science"? Popper's polemic began when he was a young Viennese arguing that Marxists and Freudians were pseudo-scientists. Did Lukács ever answer that challenge?

RADVÁNYI: It's well known in the history of economics that Marx—not his successors, mind you, but Marx himself—is the heir to what is known as the labor theory of value, with David Ricardo and Adam Smith as his predecessors. In Lukács's language you can identify, in nineteenth-century economists, a labor theory of value research program, with Marx as the nineteenth-century culmination. You can identify all the categories needed to reconstruct Marx's work in research program terms, including the labor theory of value as the hard core, Marx's economic predictions, the sequence of economic models he used, his observational data, and so on. Marx also had an extremely clear conception of himself as participating in the same program of political economy as Smith and Ricardo. Lukács, in short, created a critique of Popper that also leads to a reconstruction of Marxian economics as "science."

KADVANY: You're saying that playing Popper's and the positivists' "What

is science?" demarcation game leads to Marxian economics being a "science" after all.

RADVÁNYI: Precisely. Now, you have to be careful in that Marxian economics didn't go far after Marx, but as far as what Marx created, his work satisfies Lakatos's elaborate criteria for "what is science." The approach that Lakatos took, of showing this via what critical theorists would call an "immanent critique" of Popper's philosophy, is just the way to do it. Marx subtitled *Capital* "A Critique of Political Economy," so the way to deal with Popper's challenge that Marxism is "not scientific" is via the same critical methodology, at least from a Marxist perspective. The historical ironies are a delight and an inspiration. Lakatos did what Marx might have done, had Marx come to England as a philosopher of science rather than an economist. Because the theory of research programs itself, with its changing logic, has a historical character, the consistency between the account that's implied in Lakatos about Marxian economics and Marx's own constructive historicism is quite deep.

KADVANY: How explicit is the application of the theory of research programs to Marxian economics in Lakatos?

RADVÁNYI: He doesn't mention a word about it, and numerous economic historians who are familiar with the methodology of scientific research programs successfully manage to avoid the issue. But it's also straightforward historiography that's supported by Marx's own account of economic history in his *Theories of Surplus Value*. Again, the conventional history of nineteenth-century political economy identifies the tradition largely with Smith, Ricardo, and Marx. There was a debate several years back over the labor theory of value prompted by technical work of the economist Piero Sraffa, so the topic still is somewhat alive.

KADVANY: Aren't there still some scientific pretensions here about prediction in economics?

RADVÁNYI: Marx made a number of economic predictions, such as the expected falling rate of profit, and these have been studied empirically. Most were not confirmed, though there's some isolated positive evidence. But remember, the competitors to Marx's research program are other nineteenth-century economic research programs, not physics. Though most of his predictions were not confirmed, Marx was conducting reasonable economic science, if your standard of science is "research program." Marxian economics started degenerating only after Marx; in Marx it still shows its promise and a certain genius.

KADVANY: But almost everyone sees "economics as science" as a deeply suspect claim; the subject is fraught with ideological implications regardless of where you start. No matter what, you just can't take a "rehabilitation" of Marxian economics too seriously.

RADVÁNYI: Marx said that Ricardo was the most "honest" economic "sci-

entist" for rigorously adhering to the labor theory of value, and it was the labor theory that defined Marx's research program. It's what Lakatos calls the "hard core" of the program: it doesn't get refuted or confirmed directly, but it unifies all the detailed theories and models built out from it. Now, how disingenuous is Marx's historical reconstruction of his economic, "scientific" predecessors? How central was the labor theory of value before Marx, or at least Ricardo? Marx wanted to use the labor theory as his central object of critique, to show its internal contradictions, and ultimately all the contradictions of capitalism. So it was only in Marx's interest to define "the science" as he did; it fell into his reflexive scheme of matching economic ideology to class interests, and economic ideology to labor and market practices. It's part of Marx's strategy of combining ideological criticism with participating in the tradition of classical political economy, and of being at least as good an economist as his predecessors. If you now buy into Lakatos's conception of scientific progress, you have to accept that Marx's economics, which supports his ideological analysis, is "science." Does that imply that Marx's radical theory of ideology now becomes "science," too, since the former is expressed through the latter, and especially as Lakatos allows for a dynamic, changing logic of science? There's no inconsistency here between an economic science and the idea that it may dissolve into history, along with its facts and the economic form of life constituting them. Is Marx's "critique of political economy," as a historical enterprise, then also "science"? That would all appear to be coherent via Lakatos, and it has nothing to do with the tired old idea of whether Marx was a "determinist" or not; that just is irrelevant. The point of seeing Marxian political economy as a research program is not to rehabilitate Marxian economics, but rather that in one of the most famous episodes in the history of ideas, you cannot separate out ideology, or historical criticism, from science, no matter how good a job you do at "methodology." Lakatos ultimately gives, implicitly, a profound account of the entanglements among historical criticism, scientific method, and ideology in which they are inextricably bound to one another.

KADVANY: That would seem then to undermine the ultimate importance of Lakatos's philosophy of science, if his rationalism is inexorably wedded to ideology.

RADVÁNYI: It undermines the philosophy of science as nonideological, but in a very instructive way. The right word is *deconstruct*, since he has uncovered some persistent contradictions, or "aporias," if contradiction is too logical. Lakatos would, of course, hate the idea of deconstruction, but it's hard to avoid it, given his Hegelian commitments. Superficially, the theory of research programs is a liberal, historicist rationalism trying to avoid the stain of ideology. In the end, Lakatos's philosophy of science turns out to be about the troubling difficulties of that very enterprise; that's the covert lesson.

KADVANY: What is known about Lakatos's Hungarian background?

RADVÁNYI: Lakatos was a Hungarian Jew. He was born Imre Lipsitz in 1922, then, according to some accounts, became Molnar when he joined the Communist underground during World War II. His mother, uncle, and grandmother died in the Holocaust. Various stories abound, including some of Lakatos's treachery in the underground, and these have recently been confirmed by archival research. After the war, Molnar changed his name again and became Lakatos. He published a fair amount, was known as a brilliant debater, and was involved in Stalinist *apparatchik* work for the government on educational issues. In a college yearbook he is called "Mephistopheles" and "a slinking wolf." Interestingly, some of his writing from just after the war shows his inimitable footnote style, like what he used in England. He was imprisoned for four years in the dreaded Resck forced-labor camp during the worst times of the Stalinist "ice age," including, he said, a year in solitary confinement. After Stalin's death and the "thaw," he was released, and supported himself by translating the great Hungarian mathematician George Pólya's writings on mathematical heuristics into Hungarian. Lakatos left Hungary for good shortly after the failure of the 1956 revolution, and after participating with many ex-Stalinist intellectuals in the important Peitöfi circle debates, which helped precipitate the revolt. He was a paradigmatic Hungarian élite intellectual of 1956.

KADVANY: Mathematics then was his primary interest when he went to Cambridge after 1956.

RADVÁNYI: Yes. There he was, a superannuated graduate student, fresh from the horrors of Budapest. His age wasn't all that unusual. Francis Crick, who codiscovered DNA in the 1950s, was also older, and the recent Nobel economist John Harsanyi also took an unneeded Ph.D. when he came to the U.S. from Hungary. It was a way of entering the culture. But mathematics, and the complementary roles that heuristics, education, and history would play in *Proofs and Refutations*, could have been in his mind well before he arrived in Cambridge through his work with Lukács and Pólya.

KADVANY: Cambridge was associated with Communism for many years. RADVÁNYI: Through the Cambridge spies Kim Philby, Guy Burgess, Donald MacLean, and Anthony Blunt, along with Marxists or communists such as John Cornford, Maurice Dobb, and many others. That phenomenon was over by the 1950s, yet at Cambridge, Lakatos was still more openly Hegelian. It was the era of the Moral Science Club, and Lakatos's intellectual differences with his hosts could not have been more pronounced. But once he moved to the London School of Economics and took on the role of Popper's best student, he at least appeared to become somewhat right wing and disowned his Hegelian past. He rightfully criticized student radicals at the LSE, perhaps fearing a repeat of the kind of subversion he fomented himself while a Stalin-

ist, but I cannot believe completely in the innocence of his actions or words. It's almost comic. This is also just what, for example, Philby did, too: an apparent *volte-face* from the well-known leftism of his youth, which is supposedly "forgotten" with "maturity." Lakatos was the ex-commie who flips flops to its conservative opposite. I think it was at least partly a pose, but we can never know for sure. Lakatos was editor of the prestigious *British Journal for the Philosophy of Science* when he died; it reminds me of Philby being the head of England's MI5 counterintelligence.

KADVANY: But then are you saying he was a mole or not? What finally is your evidence?

RADVÁNYI: We have all the evidence of a mole, which means the evidence can be interpreted in two ways. That's the whole point. I can't "prove" anything, just assemble a body of evidence and draw conclusions which others can reject or accept. Philby, of course, managed to live on in England for several years after Burgess and MacLean escaped to Moscow. English culture at times is just brilliantly naive.

KADVANY: Let's get back to the philosophy of mathematics, which was Lakatos's area of focus in the 1950s. Is there a role for disassembling there? It seems different from the covert battle going on with Popper, the changing logic, and Marxian economics.

RADVÁNYI: The concealment of heuristic logic, or the informal logic leading to a mathematical proof, has a history as old as Archimedes. The seventeenth-century mathematician John Wallis noted of Archimedes' geometrical treatises that they covered up his ideas, and both Galileo and Descartes make similar comments. Partly there is the motive of keeping a good trick to oneself, but there's a methodological issue, too. A formal proof, to be valid, has to start with definitions and assumptions and proceed from there to the theorem proved. What actually is done by the practicing mathematician is often the reverse. A theorem is conjectured, but by working "backward" from the conjecture's consequences (or consequences of assuming the conjecture to be false), the "right" definitions and starting point may be discovered, but this search and its logic is usually concealed in the final proof. The Greeks understood this informal pattern of discovery in their "method of analysis and synthesis," which was an educational tool intended to make proofs easier to create. Remarkably, Marx seems familiar with this tradition, and notes a kindred difference in the *Grundrisse*, the rough outline for *Capital*, between the historical sequence of economic categories, and the inverse logic of their theoretical presentation. This difference is also relevant vis-à-vis Marx's known, even acknowledged concealment of Hegelian ideas "built into" *Capital* and Marx's dialectical "presentation." Popper and the logical positivists rediscovered the contrast between the logic of justification and the logic of discovery, but only Lakatos saw its methodological importance for writing mathematics

books and histories. His criticisms of strictly deductive style was influential, and you see today many more mathematics books combining detailed histories of mathematics with its exposition.

KADVANY: Now, in terms of covert method, Marx's covert use of Hegel was Lukács's great discovery.

RADVÁNYI: Lukács showed in *History and Class Consciousness* that it was impossible to ignore the Hegelian influence, and its persistent positive role, in Marx's work: that, against the mechanical Marxists, Marx's conception of human consciousness was directly indebted to Hegel and implied a nondeterministic role for human agency. Lukács had inferred all this through his prodigious knowledge of the history of philosophy, and was proved right with the discovery of Marx's unpublished manuscripts in the 1930s.

KADVANY: So Lakatos in his own way is recreating all of this again?

RADVÁNYI: Yes. The way to read Lakatos is analogous to the way Lukács read and interpreted Marx, as containing a hidden and radically transformed Hegel. We just won't discover any unpublished manuscripts as we did with Marx.

KADVANY: Does this qualify Lakatos's work as Marxism? Where does it stand?

RADVÁNYI: Lukács says on page 1 of *History and Class Consciousness*, that orthodox Marxism does not imply the "belief" in this or that thesis, nor the excess of a "sacred book"; orthodoxy for Lukács refers exclusively to *method*. Now, what was Lakatos but a preeminent methodologist, and with all the right historicist claims? He even called his creation the *methodology* of scientific research programs. Not that any methodologist is a Marxist, but that Marxism is not wedded to a single intellectual or practical arena, nor to a uniform approach; you also have to grant that the social content of such Marxism may be indirectly "mediated," as they say. By that criterion, Lakatos is a Marxist, I suppose, in the same way Popper wanted to play the positivist-demarcationist game of setting up criteria of what is or is not science. Certainly the entire covert cavalcade heaps more irony on Popper, who thought he'd excluded Marxism from science. To see Lakatos as Marxist, you do have to use Lukács's general definition of Marxism, which is also the one underlying much of critical theory, because the Hegelian themes in Lakatos are so different from those used by Marx. At a certain point it makes you dizzy, like reading a Borges story. Look at me, I'm just citing Lukács, and *his* "sacred book" to characterize Marxism!

KADVANY: Does the theme of covert method in ideas reinforce the Marxist connection?

RADVÁNYI: As for Kierkegaard, there are layered masks of authorship in Lakatos, and that's something the reader has to grapple with. One of the most important layers is distinguishing Lakatos the person from the author, since

the autonomy of language, science, and mathematics is a key problem for Hegel, Popper, and their student Lakatos. Such a maieutic learning experience with the author—in which the reader learns the lesson actively, through Socratic "midwifery"—is slightly present in Marx, though he was trying to be as much of a social scientist as possible. Lukács no doubt went through a revelation when he discovered what was really going on about Hegel in Marx, and his "conversion" to Marxism is the subject of several books. But Lukács's intellectual discovery of Marx's covert method gets confounded with Lukács's social transformation from a privileged member of one of Europe's wealthiest families to one of the twentieth century's leading leftist intellectuals, and the philosophical importance of this incredible covert pattern in the history of ideas, and its intellectual discovery, gets lost. With Lakatos, the arena is shifted to math and science, and the problem of covert education and the subterranean transformations of ideas and their routes to power comes front and center.

KADVANY: Your own publications are somewhat covert.

RADVÁNYI: Not really. Before the collapse of Soviet rule I wrote some English-language work under your name, John Kadvany, but it wasn't much of a secret. It was too close to my real name, for one thing. But it was fun for my friends, who know I'm a real coward. I keep my mouth shut if I possibly can. Hungarians, by the way, find the Hegelian-Marxist reading of Lakatos almost repulsive; it conjures up too many ghosts they still can't deal with intellectually.

KADVANY: Lakatos was a survivor of the 1956 Hungarian revolution. Does that event have a specific bearing on his covert Hegelianism?

RADVÁNYI: The 1956 revolution in Hungary was led by intellectuals, many of them popular Hungarian writers, and many of them ex-Stalinists. They came to see how badly they had betrayed Hungary through their allegiance to Stalin, and they saw how they helped create the prisonhouse of lies and treachery on which Hungarian Stalinism was based. It's well documented that the Hungarian Revolution was about, to use an old-fashioned word, truth, meaning the right to disassemble and free discourse. The novels about the time by Georg Konrád, the memoirs, and all the histories document the paranoia engendered by a total surveillance society, in which nobody knew what was meant in the press, where what you could say in private was a risk, where someone was always watching you visit an apartment, the whole dissembled life. You had to be very, very strong to survive this insanity, much less protest against it. The importance for Lakatos's covert writing is that postwar Hungary created a prisonhouse of lies and covert speech and dissemblance, the writers created it, but also then helped undo it, also as a kind of "immanent critique." Lakatos in this way is a philosopher of the Hungarian Revolution. He shows us in the West what it's like to dissemble in ideas, and the intricate

webs of reason which emerge from necessity to rebuild norms of truth. Lukács, of course, was a master of the dissembled writing which spread more broadly among Hungarian writers and contributed to the 1956 revolt. Lakatos, though, unlike Lukács, was a real Stalinist contributing to the perverse *Lebenslüge* leading to the events of 1956.

KADVANY: But still, your mole metaphor; Kim Philby was a murderer, not a heroic Hungarian poet.

RADVÁNYI: The mole leads a double life and through this double life becomes involved in all kinds of moral traps, problems of identity, and ultimately diabolical choices. There's also no escape. Once having been a mole, one is always at best an ex-mole, and never in the clear. Many crack under the pressure, and Lakatos provides a philosophical window into the logic of these complexities. While you might not like the mole metaphor, remember what the Hungarian revolution was about, and all that preceded it, including Lakatos's Stalinist past. A whole society had lost a workable conception of truth. About 1960 or so, János Kádár, the leader of Hungary at the time, said in a moment of reconciliation that "a whole nation cannot be suspect." To survive in such a world and undermine it, you had to be like a mole. Lakatos shows how that opportunity and its opposite are built into reason. As far as I know, though, Lakatos did not become involved with the Hungarian opposition until fairly late; for a while he argued with his friends, after being released from prison, that the regime was the best they could get. You could speculate that, if Lakatos was not central to the Hungarian ferment of 1956, his philosophy afterward was somehow denatured because of that lack of engagement. No, his philosophy is all about reason and moral compromise.

KADVANY: Marx made use of the mole metaphor as well, didn't he?

RADVÁNYI: That's in *The Eighteenth Brumaire of Louis Bonaparte*, with ironic reference to unknowing repetitions of history: "We recognize our old friend, our old mole, who knows so well how to work underground, then suddenly to emerge."

KADVANY: What does this mean about Stalinism? There's a long debate about whether Stalinism is the "outcome" of Marxism or not. Even Popper contributed to that in *The Open Society and Its Enemies*. Popper was also a hero to many behind the iron curtain, where his books sold by the thousands in samizdat.

RADVÁNYI: About Stalinism, it means that you can't disentangle "good" historicism from the "bad," you can't prevent a Stalin with reason, or rule him out philosophically. A major intellectual dimension of Stalin's pathology is the Stalinist rewriting of history. In Lakatos, scientific and mathematical methodology also turn out to be rewritings of history; that's the whole point of his historiographic theory. Lakatos's troubling lesson is that you can't distinguish these two historiographies in principle. Lakatos's historicized ratio-

nalism becomes a Faustian monster, with a tolerant rationalism bearing underneath a relation to some of the worst excesses we've seen in our century. It's frightening, but that's the final lesson I think we're supposed to get from Lakatos's conversion, his educational message from the Recsk labor camp. I admit, I too read Popper and gained inspiration from him, but Lakatos is showing how naive Popper and his "open society" is in the context of actually existing Stalinism. Sure, Stalinism was the antithesis of an open society, it was a closed society and repressed criticism. But the writers who started the Hungarian Revolution weren't led by Popper. Neither Popper nor most of his English colleagues could help undo Stalinism from within it, especially if they were at least part Stalinist themselves, as were the Hungarian writers. Lukács was one of their intellectual heroes, even though he wasn't on the front lines in 1956. He and the writers knew that you had to lie to survive, and they were sick of it, but they would prevail. The story goes that when a military officer asked Lukács to turn over his weapon after the revolution had failed, he handed in his fountain pen.

KADVANY: Yet Lakatos's conversion all occurs in England, or rather, Anglo-American philosophy.

RADVÁNYI: I see it as Lakatos's mission as a cross-cultural educator. How else, except through conversion, might he effectively teach of rationalism, historical reconstruction and rewriting, and the covert dissemination of ideas? Lakatos was an "extraterritorial," one of those writers for whom their political, geographical, linguistic, and intellectual displacement has become an essential element of their work. The essence of Lakatos's extraterritoriality is that he was a philosophical mole. Lakatos shows the subterranean connections in and out of a Stalinist society and an open society. The heroes of Budapest in 1956 showed the way out, and Lakatos takes us back into their world, from the other side, from the open society to the closed.

KADVANY: There's definitely a touch of evil in Lakatos.

RADVÁNYI: This was intimidated by George Soros when I wrote him for support a few years back. I was turned down, since my interests didn't match what his foundation was doing, but I think he was also intrigued by what I said Lakatos did to Popper, who was Soros's philosophical model. Soros is a great believer in Popper's idea of an open society and did much in its support in Central and Eastern Europe through his foundation's work.

KADVANY: Now you are talking about the billionaire Hungarian-American financier?

RADVÁNYI: Yes. Soros of course is also a Hegelian, and a Popperian, it's all laid out in his book *The Alchemy of Finance*. It's funny how these Hungarians and Hegelians gravitate to Popper, or vice versa. By the way, Soros's unsparing criticism of orthodox economic theory in *The Alchemy of Finance* is close to Marx's and Lukács's, that economics thoroughly confounds natural

and social facts and fails to account for the reciprocal influences between economic facts and our perceptions of them. Soros uses his word *reflexive* to describe the active relation we have in perceiving and changing economic facts, but *dialectical* would do just as well. I suppose Soros, through his work in the Soviet Union, is a bit of what Hegel called a world-historical individual. What a mensch.

KADVANY: János, I'm sorry, I think we're running out of time for George Soros. It's been good talking with you.

RADVÁNYI: *Köszönöm szépen, Kadvany. Viszontlátásra.* [Thanks very much, John. See you again.]

Notes

1. Editor's note: Lakatos's writings have been published as John Worrall and Elie Zahar, eds., *Proofs and Refutations: The Logic of Mathematical Discovery* (New York: Cambridge University Press, 1976); Worrall and Gregory Currie, eds., *The Methodology of Scientific Research Programmes: Philosophical Papers Volume 1*, and *Mathematics, Science and Epistemology: Philosophical Papers Volume 2* (New York: Cambridge University Press, 1978).