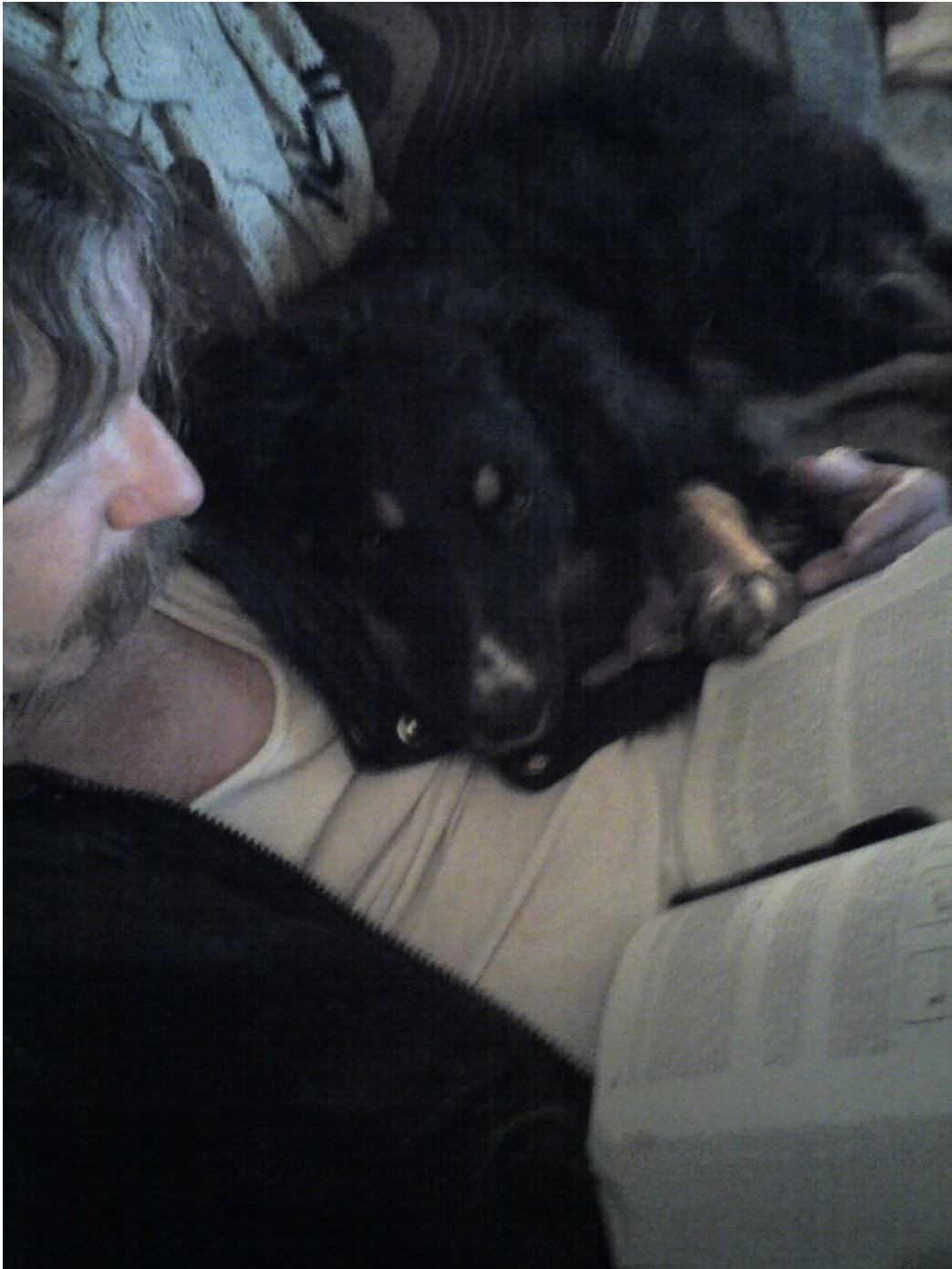


Frontispiece



Stanzi helps me read Roger Penrose; Christmas, 2009.

Epigraphs

Independence is for the very few; it is a privilege of the strong. And whoever attempts it even with the best right but without inner constraint proves that he is probably not only strong, but also daring to the point of recklessness. He enters into a labyrinth, he multiplies a thousandfold the dangers which life brings with it in any case, not the least of which is that no one can see how and where he loses his way, becomes lonely, and is torn piecemeal by some minotaur of conscience. Supposing one like that comes to grief, this happens so far from the comprehension of men that they neither feel it nor sympathize. And he cannot go back any longer. Nor can he go back to the pity of men.

Nietzsche, *Beyond Good and Evil* #29

It's always like that. You never understand anything. — Yes, it's always like that. You never understand anything. And then one night, you end it in death.

Lemmy Caution, in *Alphaville* [Jean-Luc Godard, 1965].

“Baskerville, you blank round, discursiveness is not literature.”
— “The aim of literature,” Baskerville replied grandly, “is the creation of a strange object covered with fur which breaks your heart.”

Donald Barthelme: “Florence Green is 81”.

Letter prefatory (to Richard Hertz)

Lieber Herr Doktor:

Since you evinced interest in the rather slapdash précis of my philosophical notebooks I sent you on a previous occasion, here you find a somewhat more complete, albeit still fragmentary, reconstruction of their contents.

As I explained then, the originals (or what survive of them) are not in my possession. This has necessitated a rather lengthy process of reconstruction; during which, inevitably, the design of the work, insofar as there was one, has changed repeatedly.

The previous draft was a sort of *Apologia*, and accordingly contained autobiographical elements. These seem to have excited a lust for blood in other readers — “Give us *Walden*,” they say, “only with more accident porn” — and thus I have adopted a more or less chronological principle of organization, incorporating descriptions of various incidents which explain how I came to think about some things; and not about others, like how I was supposed to be making a living.

As you have now attained distinction as a chronicler of spectacular artistic flameouts, though this may amuse it can hardly impress you: I have yet to discover Loser Groupies, and the narrative is thus lamentably deficient in coke-fueled orgies; or for that matter swordfights on the palace stairs, bullet-time kung fu, motorcycles jumping onto moving trains, or recurrent scenes of High Laptop Drama involving illicit wire transfers to numbered Swiss accounts.

Should the opportunity present itself to prepare a revised edition, I promise to repair these deficiencies. After all, it's not like I don't know how to make shit up.

But instead what you have in hand is a history, in part, of what Blake called "the Real Man, the Imagination".

It is addressed to you (and addresses you) not so much because I don't care whether anyone else reads it,¹ but because it doesn't matter if they do.

So you might think of it as a series of letters; or postcards, perhaps — one all-too-obvious provisional title was *Postcards of the Hanging* — incorporating notebooks, attempts at essays, extracts from my correspondence, journals, calculations — in short, a kind of greatest-hits album, albeit from someone who never really cracked the charts.

Actual dated entries are interpolated at fairly regular intervals, particularly after the mid-Nineties, when I have my archived electronic correspondence to draw upon. This mimics a device employed in video compression, of periodically inserting so-called key frames, from which extrapolation can be performed forward or back.²

But insofar as there is any intrinsically cinematic device employed, it is the jump cut; and for more or less the same reason that Godard introduced it in the first place — there are a lot of missing pieces here, and the only way to bridge the gaps is to make a virtue of necessity, and pretend that a lapse in continuity represents an artistic choice. — Fortunately, if you pretend consistently enough, it really does become an artistic choice. And insofar as this is supposed to be a portrait of the

¹ Not that this is likely in any case. — "Never literary attempt was more unfortunate than my Treatise of Human Nature," said Hume, "It fell *dead-born from the press...*"

² Not the best idea, but as good as may be expected from design by committee, in this case the infamous Motion Picture Experts Group (MPEG). — Admittedly it doesn't work as badly as one would have thought.

mind of the author, to project some kind of illusion of consistency of focus would be inherently dishonest. — There were certain things I thought about at certain periods; this does impose a natural order on ideas, which parallel events. — But the order isn't linear; one thing may follow another, but with twenty years interposed; and no period ever really concluded, so that there is a sense in which, for instance, I am still making entries in my journal for 1975 — not because I am trying to edit history (though certainly I would if I could), but because there are things I never had time to write down that I am still filling in.³

I shouldn't exaggerate the degree to which anything was ever really written down completely. — Not all that long ago I had occasion to write a program to do a lengthy symbolic computation — a mixture of algebra and calculus; rich kids use Mathematica for this purpose, but I couldn't afford that, and had to, as we used to say, roll my own. — It wasn't easy, and I came to the reluctant conclusion that Wolfram may have earned his money. — At any rate this was rather complex, and I wasn't sure how to go about it until one day when everything fell into place, and I summarized the essential logic of the thing in five lines of pseudocode, which I wrote down on an index card and taped to a bookcase next to my computer. I then proceeded to expand this into several dozen pages of Lisp,⁴ which in turn generated several hundred pages of algebra to answer my original question. — And everything I do is like this: I make a few cryptic notes, toss them into a rucksack, pull them back out, days or decades later, and — perhaps — spin a composition from them; though more likely I make a few more cryptic notes to record the idea I have just had about the previous idea and

³ Stanislaw Ulam, who had a remarkable gift for formulating problems in elementary terms that no one seemed to have thought of before, said that mathematics was like the Cantor set: between any two established propositions there was always some kind of hole, an unanswered question. — It is something like that.

⁴ A language which allows great compactness of expression. It would have been ten times as long in C.

then toss the bundle back into the bag. I suppose it is sort of amazing that I can — usually — keep all these balls in the air at once, but it's not the kind of thing that can go on forever.

So what you see here is a kind of laboratory notebook, a record of experiments. And it is almost beside the point whether they succeed or not. The process is the object. The activity is an end in itself.

Nietzsche [Gay Science #41]:

Against remorse. — A thinker sees his own actions as experiments and questions — as attempts to find out something. Success and failure are for him *answers* above all. To be annoyed or feel remorse because something goes wrong — that he leaves to those who act because they have received orders and who have to reckon with a beating when his lordship is not satisfied with the result.

As for whether this constitutes “doing philosophy” in the sense of our innocent youth, when we took that seriously/all-too-seriously — well, yes and no; what I discovered in the process of writing was that writing about “philosophy” led naturally to writing about writing about it; and after that — what can I tell you — everything went south.

Moreover the ideal that I embraced was one of absolute freedom of speculation. I could not help but try to understand everything at once. I had a thousand different things in mind, because everything I thought about provoked some flicker of insight, some suggestion that yes, there was more here, if I only pushed a little harder. And that left me with a thousand different investigations in progress, each one promising, enticing, each one something I thought I could eventually finish.

It seemed the basic problem was that my energies were dissipated by external circumstances — though really, who knows; I never understood the quantum theory of measurement until I was reduced to sleeping in a garage. — Because when you are completely desperate, you have no choice but to think things through. — At any rate though I don't particularly regret having bailed on an academic career (not that one was really possible), I do wish I'd been better at living outside the law. Which is to say that I wouldn't have done anything differently. I just wish I'd got away with it.

Anyway, here you have it. I was aiming for a sort of cross between the analecta of Heraclitus and the sallies of S.J. Perelman,⁵ but inevitably fell short. — The point, however, was to entertain you. If it succeeds in that respect, it will have fulfilled its purpose. — In any case, it was fun trying.

Later.

⁵ "Humor to me, Heaven help me, takes in many things. There must be courage; there must be no awe. There must be criticism, for humor, to my mind, is encapsulated in criticism. There must be a disciplined eye and a wild mind. There must be a magnificent disregard of your reader, for if he cannot follow you, there is nothing you can do about it. There must be some lagniappe in the fact that the humorist has read something written before 1918. There must be, in short, S. J. Perelman." — Dorothy Parker, in her introduction to *The Most of S.J. Perelman*. [New York: Simon and Schuster, 1958.]

Idiosyncrasies

Stylistic idiosyncrasies include a fondness for Joycean runtogetherwords, an occasional preference for British spelling conventions (as in the *Travelling* Salesman Problem), a tendency to treat question marks as internal punctuation (“*Quis custodiet ipsos custodes?* asking for a friend”), and an absolute and uncompromising insistence that the apostrophe should never be used to form the plural. — Among others. (Perhaps I should note sentence fragments as well.)

The drawings are amateurish. But they had to be there. Ah well.

There are either too many photographs or (more likely) too few. The whole thing would probably have gone better as a comic book, in fact. Next time for sure.

Acknowledgments

— The photographs in *New Year's Morning at the Flagstaff House* are (as there noted) the work of Mark Lankton.

— The collage that serves as frontispiece to *The Notebooks of Leonardo Garbonzo* is the work of Dan Fogelberg. (The artist, not the rock star.) The text came from a letter I wrote him⁶ from Pasadena in 1972.

⁶ At least I think I wrote it to him. It might have been Lankton.

Note on the references

I have been atypically meticulous in citing sources in what follows, but for the most part (owing to its scattered composition) locally, not globally; still, a few horses have been flogged shamelessly, and should be prefaced once and for all.

[1] Though there are many individual references to more recent editions of Nietzsche, for the most part quotations derive from one of the translations of Walter Kaufmann. For which see:

The Portable Nietzsche. [New York: The Viking Press, 1954.] Contains assorted letters, *Thus Spake Zarathustra*, *Twilight of the Idols*, *The Antichrist*, and *Nietzsche Contra Wagner*.

Basic Writings of Nietzsche. [Modern Library edition, New York: Random House, 2000.] Contains *The Birth of Tragedy*, *Seventy-Five Aphorisms from Five Volumes (Human, All-Too-Human, Mixed Opinions and Maxims, The Wanderer and his Shadow, The Dawn, The Gay Science)*, *Beyond Good and Evil*, *On the Genealogy of Morals*, *The Case of Wagner*, and *Ecce Homo*.

The Gay Science. [New York: Random House, 1974.]

(The translations collected as *The Will to Power* by Kaufmann and R.J. Hollingdale were once useful, but have been superseded by the editions now available of Nietzsche's *Late Notebooks*.)

[2] For Leibniz:

Gottfried Wilhelm Leibniz: Philosophical Papers and Letters, ed. Leroy E. Loemker. [Dordrecht: Kluwer, 1989.]

[3] For Wittgenstein:

Notebooks 1914-1916, transl. G.E.M. Anscombe. [New York: Harper, 1961.]

Tractatus Logico-Philosophicus; transl. of *Logische-Philosophische Abhandlungen* by D.F. Pears and B.F. McGuinness. [London: Routledge & Kegan Paul, 1961.]

Philosophical Investigations; transl. of *Philosophische Untersuchungen* by G.E.M. Anscombe, P.M.S. Hacker, and Joachim Schulte. [Oxford: Basil Blackwell, 1953.]

Remarks on the Foundations of Mathematics; transl. of *Bemerkungen über die Grundlagen der Mathematik* by G.E.M. Anscombe. [Cambridge: MIT Press, 1967.]

Norman Malcolm, *Ludwig Wittgenstein, A Memoir*. [Second edition. Oxford: Clarendon Press, 2001.]

G.H. von Wright, ed., *Letters to Russell, Keynes, and Moore*. [Ithaca: Cornell University Press, 1977.]

— There may also be more than one reference to:

Ray Monk, *Ludwig Wittgenstein: The Duty of Genius*. [London: Random House, 1991.]

[4] For the pre-Socratics (mainly Heraclitus):

John Burnet, *Early Greek Philosophy*. [London: Adam and Charles Black, 1908.]

[5] Unless otherwise specified, quotations from Plato are from that oldie-but-goodie:

Benjamin Jowett (transl.), *The Dialogues of Plato*, in five volumes.
[Oxford: Oxford University Press, 1892.]

[6] Augustine is quoted extensively from:

Confessions. Translated by R.S. Pine-Coffin. [London: Penguin Books
Ltd., 1961.]

{...}

(The prior text, in part:)

Notebooks (5/17/2017)

How extremely distracted I am cannot be described. I dig up various things from the archives, examine ancient documents, conquer unpublished manuscripts. From these I strive to throw light on the history of Brunswick. I receive and send letters in great number. I have, indeed, so many things in mathematics, so many thoughts in philosophy, so many other literary observations which I do not wish to have perish, that I am often bewildered as to where to begin [to Placcius, 1695; G., IV, 413 n.]

— Leibniz [Loemker pp 12-13].

What I'll attempt here is a telegraphic summary of the topics covered in my notebooks — what I usually refer to as “the contents of my trunk”, though it's more like a heap of backpacks with papers falling out of them. Since I don't have most of the physical records with me, indeed a lot of them have been lost, this is more or less from memory, and whatever I have sitting on my laptop.⁷ But I think it's fairly representative.

{...}

But first, obviously, there's an essay I owe you, somewhere in the intersection of personal history, methodology, and philosophical

⁷ Reasons that even after many years not everything is sitting on the laptop: too much work involved in transcription (which is also incredibly boring, really stultifying labor); I still think best with a fountain pen in my fingers, doodling nervously; I mainly think in pictures, and there are almost always diagrams or sketches to illustrate significant points; I frequently lapse into mathematical notations — particularly, of course, when thinking about mathematical questions.

exposition, which explains why I didn't pursue any of this more seriously.

The answer is that I did and I didn't.

The reason for that was that to the extent that I took philosophy seriously — and at times I took it quite seriously indeed, indeed too fucking seriously — the idea that it was supposed to be some kind of “career” always seemed ludicrous.⁸ Not that I didn't occasionally lean toward that interpretation of the activity, but when I did more or less by definition I wasn't really thinking about philosophy, I was trying to come up with a hustle.

Another reason is one I think I quoted to you once, a remark of Russell's⁹ to the effect that the philosophy of logic was so difficult that it was impossible to think about it directly, you could only back into an insight by accident every six months or so and that was all the progress you could expect to make. — Nietzsche says something similar. — In a certain sense I've thought about a certain set of fundamental problems continuously since I was in high school, and in a certain sense I've made progress, though in other respects I'm still sitting in the same place — e.g., shouldn't the problem of the order of nature dissolve, when you look at it the right way? still stuck on that one though I think it must be so — but it's all been very nonlinear, everything I've managed to understand has come in a flash when I thought I was thinking about something else, and nothing ever attains

⁸ Somewhere below we get to what Pasternak said about Yuri Zhivago; see also VIII, the pictorial essay *New Year's Morning at the Flagstaff House*.

⁹ He remarks in “The Philosophy of Logical Atomism” that “... in very abstract studies such as philosophical logic ... the subject-matter you are supposed to be thinking of is so exceedingly difficult and elusive that any person who has ever tried to think about it knows that you do not think about it except perhaps once in six months for half a minute.” [Robert Marsh, ed., *Logic and Knowledge*, London: George Allen & Unwin, 1956, p. 185.] — Compare Nietzsche [*The Gay Science* #381]: “I approach deep problems like cold baths: quickly into them and quickly out again. That one does not get to the depths that way, not deep enough down, is the superstition of those afraid of the water... The freezing cold makes one swift.”

that polished final form which for some reason obsesses us though it always turns out to be a Fata Morgana.¹⁰

And part of the problem must have been that I had formed a number of Romantic notions about philosophy — one might say because of my admiration for Nietzsche and Wittgenstein, but actually it was the other way around, the reason I fixed my attention on those guys was that I could identify with their style and their mode of thinking — among which were the idea that it was a fundamentally artistic endeavor, that one should not write books or papers because those were inherently inauthentic, that the point was rather to provide a chronicle of an intellectual journey which was probably destined to end in failure, since it was an uncompromising attempt to find your way to the absolute bottom of things.

For that reason the literary model that fascinated me, indeed does so still, was not even the *Tractatus* but the notebooks Wittgenstein kept in Norway, whose only organization was chronological and which constituted not only a philosophical but a spiritual journal of his passage through the problems of the foundations of logic and the nature of the world.

One of the absurd corollaries of this attitude is that you shouldn't plan on being discovered until a century after your death. This sounds ridiculously pretentious, but I'd swear it's the secret wish of anyone who calls himself a "philosopher". What else can explain the popular obsession with Frege — a really unappetizing figure in most respects, a virulent antisemite for instance, and not really as central a figure in the development of logic as afterwards pretended — essentially, as

¹⁰ "Whether it happens that such a principle really exists, and even that we succeed in uncovering it from its cloak of fog, or that it recedes as we pursue it and ends up vanishing like a Fata Morgana, I find in it for my part a force of motivation, a rare fascination, perhaps similar to that of dreams, No doubt that following such an unformulated call, the unformulated seeking form, from an elusive glimpse which seems to take pleasure in simultaneously hiding and revealing itself—can only lead far though no one could predict where... ." [Alexander Grothendieck.]

Russell explained, he had to reinvent everything Frege had done before he could even understand him, so obscure was his writing, and then had to resolve the paradoxes Frege had never even noticed. — What was so great about this guy? Why do they all idolize him? — Well, that's obvious: he was an obscure professor nobody appreciated during his lifetime, who was afterward celebrated as a great man far ahead of his time. That's what they all want to be.¹¹ The myth of Frege is the myth of the Philosopher. — And I bought it too.

So really when I left California that was my basic ambition, to find a shack on the side of a mountain somewhere, just like Wittgenstein and Heidegger, and then make cryptic entries in notebooks that probably wouldn't be unearthed before the end of the next Ice Age, or something. — As a concession less to realism than to another form of Romanticism I didn't embrace the usual lipservice to asceticism, obviously, and always framed the issue as one of moving up the canyon with my old lady named Sunshine. But once we got there, I was going to split wood for the stove and think Deep Thoughts. You bet your ass.

How successful was I in attaining these goals? Well, it took longer than expected, but I lived in this place for a couple of years in the midEighties (I think I sent you this picture once before):

¹¹ You could, honestly, analyze this in the same way that Nietzsche did resentment, with the Christian day of judgment and revenge of the righteous replaced by the judgment of what the French *philosophes* used to refer to as "Fair Posterity". — "You guys are laughing at me now, but wait until the twenty-third century... ." — I now understand they'll still be laughing at me in the twenty-third century, but I don't give a shit.



and even though my girlfriend's name was not Sunshine but Kathy she was indeed quite the quintessential hippie bombshell, vivacious, red hair, big chest, and a five thousand watt smile. (A dancer, of course; I always fall for dancers.) — I took long hikes every day with my dogs, and often entertained Deep Thoughts; at least when I wasn't worried about how I was going to pay the bills.

So in this period I did write a lot. In fact in the house you see I had a bookcase seven feet tall and four feet wide (I took your advice and built it myself) which was stacked from top to bottom with my notebooks. — Most of my old manuscripts, however, as maybe I will get around to explaining, were lost, and probably weren't worth much anyway — numerous open-ended calculations, and one or two million words of internal monologue transcribed mainly because I found it satisfying to pound on the typewriter keys (the computer is admittedly faster but that was so much more therapeutic) — but the essential conclusions were all fairly well internalized; it was a frequent occurrence, after a certain point, that I would pick up some chunk of the corpus, read for a minute, be struck by some insight I would feel

compelled¹² to scrawl in the margin, and then when I'd finished discover that I'd made an identical comment — sometimes nearly word for word — on a previous occasion, and written it on the other side of the page.

A lot of it was just notes on my reading, which was fairly scattered anyway, hardly systematic, and the world will spin on without my extended meditations on e.g. how the logic of “presupposition” was exposed by theories of integration in the calculus. Unmoored and unhinged as I often was, I would carry on at great length without much point or purpose. These were exercises, not much more. I reached certain conclusions, absorbed them, and as Wittgenstein said, once we've climbed up our ladder we can kick it away.

Much later, however, one thing that seems rather strange is that though it may look even to myself as though I've accomplished nothing, when I consider the list of the problems I took really seriously — for the most part very deep questions, things which at first I could see no way to approach — it seems as though I've solved most of them; or at least come close enough to satisfy the murky intuition¹³ I inherited from my Black Forest ancestors.

Unfortunately since all this went on while I was mainly doing something else, pushing a broom or whatever, the part of the process where you are supposed to sit down and get it done, write the paper e.g., simply didn't happen. A lot of it is that the traditional idea of

¹² This was, literally, physical compulsion. I remember one sleepless night when I was so paralyzed by Angst that all I could do was write frantically on a clipboard held above my face (I was afraid to move) and toss the sheets onto the floor when I finished with them.

¹³ Nietzsche is always funnier: “My genius is in my nostrils.” It does come down to a sense of smell.

publication only makes sense within a social construct to which I never belonged.¹⁴

But at any rate this underground record of success includes not simply relative trivialities like computer algorithms,¹⁵ but problems in mathematics and mathematical physics. — Which brings us to the last, and maybe the central difficulty: the more I thought about philosophical problems, at least the ones I could approach through the analytical tradition, the more it seemed to me the essential insights, where you could find them, were mathematical.

{...}

Really this should have been obvious from the very beginning. Russell said in *The Principles of Mathematics* that mathematics consisted of all propositions of the form “p implies q”, i.e. all purely logical deductions. In other words analytic statements — the results of analysis — were mathematics, and mathematics was the set of analytic statements. — Obviously a modern objection would be that the analytic/synthetic distinction was bullshit, and you could write Kant’s *Critique* (or whatever) between the cracks, but I thought of that as cheating. Analysis, as originally conceived, the pure project of the *Principia* and the early positivists, was never going to be anything else.

And there were striking illustrations. — Wittgenstein’s *Tractatus*, for instance, is, at bottom, an attempt to reduce the thinking subject — qua logical being — to a machine, specifically a machine that evaluates truth-tables. What else could you expect from an engineer, after all? but a primitive conception of an artificial intelligence. — The actual

¹⁴ Of course a lot of it is probably just the abbreviated attention span that is a consequence of constant interruption. Or [after 1992] the peculiar hangover that resulted from quitting smoking. Maybe I just need encouragement, or maybe just a bucket of Adderall, I don’t know. We’re talking about habits that didn’t form.

¹⁵ In that regard I’ve never missed yet, even when confronted with open questions and unsolved problems. I have no idea why this has never made me any money.

completion of this program, though I've never seen it acknowledged by students of Wittgenstein, was in the work of Gödel, Church, and Turing in the Thirties, which replaced the primitive truth-table evaluator with the general conception of the computing machine (which became a theory of mind). — And this actually refuted many of the fundamental doctrines of the *Tractatus*. It is one of Wittgenstein's cardinal principles, for instance, that the structure of language can't be discussed *within* language (which is entire in itself) — a principle he stuck with even in his later work: the picture can't depict its own frame. But this simply isn't true. If a logical system is strong enough to describe its own structure you do have bizarre consequences like Gödel incompleteness and the unsolvability of the halting problem for Turing machines, but familiar systems like arithmetic do have that property. In machine-theoretic language Wittgenstein was only thinking of a very restricted class of automata, which Turing extended enormously.¹⁶

Here one might remark that John McCarthy concludes his fundamental paper¹⁷ on the Lisp programming language [the correlate of an abstract machine] by writing a Lisp interpreter in Lisp. Which is just the kind of thing the young Wittgenstein would have claimed was a priori impossible.

As a corollary I tend to regard Von Neumann as one of the great philosophers of the century (and I'll get to that below). — But it did

¹⁶ I don't think he ever understood that completely, but it's interesting that Turing was an auditor of the series of published *Lectures on the Foundations of Mathematics* of 1938-39. I had the vague impression for a long time that Wittgenstein had no idea who Turing was, but I read these not long ago and quite the contrary, it was obvious from the transcribed discussion that he knew he was addressing a peer and considered the whole course as basically an argument he was having with Turing.

¹⁷ John McCarthy, "Recursive Functions of Symbolic Expressions and Their Computation by Machine"; Artificial Intelligence Memo #8, Massachusetts Institute of Technology, 4 March 1959. (He also shows the equivalent of the Halting Problem is not solvable within his formalism.) — Lisp was the standard language for artificial intelligence among the MIT guys for a generation. It's my personal favorite.

turn out that every time I thought I was getting somewhere, I started thinking in terms of mathematical models, and read not the philosophical literature but some rather abstract mathematics instead.

{...}

But, anyway, pace Eliot, what falls between the Idea and the Reality is usually just another fucking Idea.

There's a concept from computer science with which you may not be familiar, that of the pushdown/popup stack. This is an abstract version of the cafeteria arrangement of a springloaded stack of trays that you can either add to by pushing fresh trays down on the top or subtract from by pulling one off to make use of it — last in, first out. You imagine that the items on the stack are all pretty simple, words of fixed length e.g., and that though the number of them is finite there isn't any upper bound on how many there may be.¹⁸

One application is to the evaluation of expressions. For instance you might want to compute something like (1 plus 2) times 3, but at any given step you may be able only to perform an operation on two items at a time.¹⁹ To do that you would push "times", then "3", then "plus", then "1", then "2", resulting in a stack 2/1/plus/3/times/ (the famous Polish notation), and then to evaluate the expression you'd pop the items off and deal with them in pairs to which you apply an operation: pop 2, pop 1, pop plus, add 2 and 1 to get 3, push 3 onto the stack yielding 3/3/times; pop 3, pop 3, pop times, multiply 3 by 3, push 9 onto the stack yielding 9/; pop 9 and the stack is empty, so that's the answer. — No wonder, you will be thinking, that computers have to be able to perform billions of operations a second: everything is reduced to elementary steps like this.

¹⁸ In practice, of course, the finite size of (real) computer memories does fix an upper bound, and "stack overflow" is a familiar error message for programmers.

¹⁹ In this respect the instruction sets of real computers differ little from those of handheld calculators.

Another application is to Chomsky's context-free grammars. This evaluation scheme is so simple that great efforts are made to keep computer languages context-free so far as possible.

The application that is relevant here, however, is to the way that I, or most people probably, approach tasks: some new task is assigned, and unless you have some other scheduling mechanism imposed on you by necessity or some inherent inclination toward self-organization,²⁰ you just push it onto the stack. So the way things get done, if they get done at all, tends to be last-in-first-out.

It is especially difficult to avoid this sort of organization if you aren't talking about tasks but rather ideas: ideas generally appear out of nowhere and get pushed onto the top; the ones about which your thinking is most animated are the fresh ones, so things get pushed and popped off the top while you're examining them; if the unfortunate necessity of working for a living at something completely unrelated to any of this provides frequent and often lengthy interruptions, things keep getting pushed onto the top (since ideas continue to arrive out of the ether no matter what your conscious mind is doing) much faster than they are popped off, and vast masses of unfinished labor get buried under newer vast masses of unfinished labor, with the predictable result that nothing ever seems to get done. Or, if it does, some fresh idea is attached to it and it gets pushed onto the stack again.

Obviously this is the story of my life. The motto comes from Monty Python: And now for something completely different.

One might ask, I suppose, why I didn't simply give all this shit up and do something useful instead. The answer is that many times I thought

²⁰ About which, it is to laugh.

I had, but it turned out that I kept thinking about these problems anyway, in fact I couldn't stop.²¹

But mainly what happened was that I kept wasting energy trying to find some way to make money that would leave me enough time to resume these numerous projects where I'd left off. Though this quest wasn't completely fruitless in that it introduced me to fields I might not otherwise have explored, e.g. computer science, I never quite succeeded.

{...}

What has been sitting on the top of the stack for a while now may be described as a few fictions, a long paper on the theory of computation, a long paper on a problem in mathematical physics, and a really long paper on the foundations of quantum mechanics....

²¹ I'd quote you Nick Nolte's speech in the Scorsese third of *New York Stories* about how you make art because you have to, but you've heard all that better somewhere else.