

REMINISCENCES:

**EXCERPTS FROM THE DIARY OF A BEHAVIORIST: THE SEARCH FOR
A SCIENCE OF PSYCHOLOGY, THE EARLY YEARS**

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In his preface to Virginia Woolf's *A Writer's Diary* Leonard Woolf wrote, "It is, I think, nearly always a mistake to publish extracts from diaries or letters ... " He noted the distortions produced by selection and the omissions required to protect "the feelings or reputations of the living." Quite indifferent to the latter concern, the editors of *The Noel Coward Diaries* stated explicitly that they saw no duty to preserve the reputations of those living or dead, but were, they pointed out, still subject to the laws of libel. Then there was the diary-like material of Truman Capote's "La Cote Basque" piece from *Answered Prayers* published in *Esquire*. See all the trouble that got him into. There is danger in diaries even when expurgated.

Yet the famous diarist Samuel Pepys gives us an eyewitness account of the great London fire that is a classic. Samuel Sewell's diary provided a nightmarish picture of the Salem witch persecutions in which he played a reprehensible part. Diaries give us a more personal record than a formal history, supplying some of the gossip, anecdotes and historical minutiae that characterize a period. There have been some "great fires" and even some "witch hunts" in psychology during the period of the last forty or fifty years. There were also some real accomplishments and some real failures, some heroes and some villains, some serious work and some accidents of chance (or did I just not know the variables?), some humor and fun and a fair amount of silliness in what I witnessed, as I perceived it. That is what is reproduced here.

From a diary that covers a wider range of topics (like my life) I have selected only those comments that seem somehow related to my life as a psychologist. Nothing then of prurient interest. The unbowdlerized version may come later. There are some psychologists I still admire, some I still like, and a few I both admire and like. I want to keep it that way. So, several more entries had to be left out! There are some psychologists I did not like or admire. Most of these comments I have retained, although in some cases the language has been moderated because of those libel laws. Not only vocabulary, but grammar and syntax are often lax in a diary. An autobiography and a diary are not the same thing and I have chosen to resist making those changes in style an audience would produce, except in those cases where my abbreviated form would be unintelligible. There is no need to apologize for a diary as long as one has the good sense to keep it private.

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One final admission. I have not been rigorously religious in keeping my diary. There are gaps. There were occasions when something noteworthy happened and I was not in the mood to jot it down. To make this into even a staccato story, I admit to having had to now "create" a diary entry here and there. I refuse to identify the invented from the real. As a device, however, comments which I do want to identify as being current, after-the-fact remarks are enclosed in brackets [...].

November 4, 1943 (Junior High)

Fall River, MA

I like my piano lessons better than school.

[I was born in Fall River in 1931 and grew up there until the fall of 1946 when I moved to Washington, D.C. where my Father was stationed at the Pentagon. I attended Central High School which was up 14th St. in the second alphabet on a hill overlooking the city of Washington. The schools were segregated at the time. That was the way the world was.]

March 8, 1948 (High School)

Washington, D.C.

From my history classroom I can look out the window and see the Capitol dome. That's exciting. Gram's friend, Joe Martin, is the Speaker of the House. He has invited me over a lot to speeches he says are important. The Congressmen talk a lot but no one listens. It seems silly talking to an empty room. His office is filled with elephants. He gave me one today [I still have it]. I think I'll study history when I go to college. At home in Fall River history was boring, except for some stories about Lizzie Borden or about the Indians like King Philip. Being able to see the Capitol and go there makes American history exciting.

December 11, 1948

Our school glee club sang at the White House last night. The White House is beautiful. Exciting to go through the entrance gate. We sang well. President Truman spoke to us and congratulated us after the lighting of the national Christmas tree. He told us to study science as it was the future and important to the country. At Blair House, Mrs. Truman was very nice, talked to each one of us. Told us a lot about the Christmas decorations at the White House, who made them, where they came from, etc. She seemed like the lady next door—kept asking us to eat more cookies! Charlie and I tried to keep our White House passes, didn't get away with it.

[Even today my memory of President and Mrs. Truman is vivid. Other than that the President talked to us about science and the future, I don't remember a word he said, but his friendly, simple, direct, unpretentious manner made a lasting impression.]

At the time the White House was undergoing extensive renovations and the Trumans were living at Blair House across the street.]

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November 14, 1949 (Freshman year)

Bowdoin College, Brunswick, ME

Was sent to Boston for freshman quest of Hell Week. Mayor Curley is running for re-election against John B. Hynes. Our task was to get Curley to sign a Hynes poster and Hynes to sign a Curley poster. Hynes refused to see us. They told us at his campaign office he wouldn't have time for us and under no circumstances would he sign a Curley ad! No sense of humor. Curley's office said it was a busy day for him but he would see us at his mansion on the Fenway at 4:30 p.m. He invited us in, laughed and thought the whole thing a good joke, fed us sandwiches and beer and signed the Hynes poster. Wish I could vote in Boston. A crook perhaps; charm for sure. Stayed at Weld Hall at Harvard with Fall River friends. Saw "Ecstasy" with Hedy Lamarr running around naked at a special showing at Mem Hall. Spent half the night drinking at Cronin's bar. Met two guys who pushed majoring in psych. They were drunk. Hitchhiked back to Brunswick. Brad said we should fake Hynes' signature on the Curley poster. We didn't. Got paddled, but not much because of the Curley success.

November 3, 1950 (Sophomore year)

Am taking Introductory Psychology with Professor Norman Munn. We call him "Normal Norman." It's the worst course I have ever taken. Munn's voice is a cross between Eleanor Roosevelt and Florence Foster Jenkins—all with an Australian accent, which doesn't help matters much. The problem is he wrote the text and essentially reads it to us in class—with little or nothing to add to what he wrote! Boring, boring, boring. Don't ever take a course from someone who wrote the textbook.

November 12, 1950

Robert Frost was here yesterday from Amherst. There was the usual reception at President Sills' house. Mrs. Sills asked him to sign her famous damask tablecloth. She always hands a pencil to guests and asks them to inscribe their names on the cloth. If the guests are famous *and* she likes them the signature is later embroidered in; the others come out in the wash. We always try to guess which guests will get the embroidery treatment. After the reception he came over to the fraternity house, sat in a great overstuffed chair and read his poetry into the wee hours of the morning with perhaps 75 of us sitting on the floor surrounding him. What a great old man. Of course he read "North of Boston," "Birches" and "Mending Wall". The poem that struck us was "The Most of It," the lines:

He would cry out on life, that what it wants
Is not its own love back in copy speech,
But counter-love, original response.

We now call exams "copy speech"—or at least most of them. But it reminds me of the biology lab. Biology is a great course, *but* in the lab if I draw what I see in the microscope I get a C (or worse); if I draw some approximation of the text

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example I get an A or a B. I'm learning more about art than science. It's a lousy way to teach how to use a microscope. I'm sure Robert Frost was not writing about my problem with biology but it struck a cord. Poems do that!

December 8, 1950

The real problem with the psychology course is that textbook. It is about as coherent as the telephone book without benefit of the alphabet to provide order. You can read the chapters in almost any sequence. It makes very little difference as there's not much progression or connection. The reading assignments do jump around, a bloody collection of facts, few more important, prerequisite or even related to any other. This is a mess. None of my other science courses are in such disarray.

[Munn's introductory textbook *Psychology*, published by Houghton Mifflin Company, in 1946 was typical for the period and, in fact, not worse than others. Along with Boring, Langfeld and Weld's *Introduction to Psychology*, published by Wiley in 1939, the two books dominated the introductory psychology textbook market for many years.]

February 22, 1951

Psychology doesn't get any better. Disjointed, disorderly, confused, just plain untidy. Even the economics course (the "dismal science") has some grand theories. Psych nothing, nothing fundamental. There has to be a theme there somewhere. Chapters 23 and 24 on intelligence and attitude tests not bad.

February 25, 1951

Went through the index of Munn's book looking under "law," "theory" and "principle." There are 23 such entries from Jost's law and the law of vividness to the Ladd Franklin theory and the Thalamic theory. No law or theory is related to any other. There was a moment of hope when "frequency principle" was listed twice but one is related to learning and the other to nerve activity, so they don't seem to be related either.

March 30, 1951

I did it, changed from the science program to major in psych and I'll stay at Bowdoin. [I had entered college on the Bowdoin-MIT plan—three years at Bowdoin, two at MIT, resulting in an A.B. from Bowdoin and a B.S. from MIT at the end of five years.] The physics and biology courses are fine, the periodic table seems to work, *but psych sure can be improved*. Bowdoin's President Hyde is famous for his incredible 1908 chapel sermon where he said to the students, "Your future will be one of consolidation. The great victories of mankind have been won. The grand framework is there. We have done that for you. Yours will be to fill in the final details." What a great speech! He sure didn't know about psych! I kind of hope it can become a science. It must be possible to improve on what it is now.

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March 20, 1952 (Junior Year)

Psych sure has a lot of data. This year took experimental psych with E. Parker Johnson [a Brown Ph.D. and student of Lorrin Riggs, Walter Hunter, etc.]. We read Woodworm's *Experimental Psychology* from cover to cover—all 823 pages of it. Parker is a good teacher, really a discussion class, only 5 of us. Did several experiments with the Lashley jumping stand and some vision experiments. Fascinating. Others with the memory drum, color mixing wheel and reaction time. Boring. Parker is a hunter, shot a deer and had us all over for venison. The lab is limited and crude, but he does his best. He has some very complicated optical system for studying dark adaptation but we don't get to use that.

Also took a course—Animal Behavior—with Normal Norman. Read two of his books. His *Handbook of Psychological Research on the Rat* is remarkable. [The other text was Munn's *An Introduction to Animal Psychology*, Houghton Mifflin Co., 1933, dedicated to Walter Hunter.] No rat ever twitched his vibrissae without Munn knowing about it. The man is encyclopedic and impressive but not much on interpretation, integration or synthesis. I am drowning in facts. They don't seem to add up to much. Munn's exams are copy speech. Keep trying to pull things together, but it doesn't add up to much.

March 10, 1953 (Senior Year)

Three last courses in psych. (1) Abnormal psych—fun but not serious. The theories come right out of Wagner's *Ring Cycle*, (2) History of Psych, and (3) my senior research project. In the history course read Woodworm's *Contemporary Schools of Psychology*. Parker [Johnson] made this an interesting course. Woodworm's formula $B = f(S, A)$ (i.e., behavior is a function of situation variables and antecedent variables) is a good try, but too general to be very helpful. At least it is an attempt. My research project is to develop an attitude/personality test of changing opinions where a fixed set of statements are variously attributed to positive or negative sources (Churchill vs. Hitler, etc.).

Am fascinated by test construction and have applied to do graduate work at the University of Edinburgh with an emphasis on tests and measures. Edinburgh seems to have a reputation in the area and it will let me spend time with the family. [My grandfather was one of 13; most of his brothers and sisters remained in Scotland producing a very large number of aunts, uncles, cousins, etc.]

September 25, 1953

Edinburgh, Scotland

Arrived in Edinburgh to start graduate work. Am to take General Psychology with The Professor, Prof. Drever, tests and measurement with Dr. Mary Collins, industrial psychology with Mr. McMeahan, and a course in philosophy with Professor Ritchie. Although admitted, I had to take entrance exams. Flunked the math test! It was a simple childish thing but based on British money: A mother gives her son 2 pounds 10 shillings and a shopping list. He could keep half the change left over. The

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dozen eggs were three pence each and the soap six pence ha'penny, the three meat pies a half crown each, etc., etc. How much did the boy get to keep? Well, it went on like this, and don't think I got a single correct answer. How could anyone deal with this money? They let me in anyway. [The Brits had not yet changed to their current decimal coinage system.]

October 15, 1953

Saw two performances this week. One, the installation of Prince Philip as honorary Chancellor of Edinburgh University. Was invited to the luncheon as representative of the foreign students. As they say of the Queen—He was gracious. Handsome devil. When I wrote to the folks that I was going to meet him they suggested I inquire after the health of the wife and kids! Actually, he seemed very human.

The other was a presentation of Tinbergen complete with a tank of stickleback fish. Tinbergen gives a moment-to-moment account of the stickleback's behavior, every dart and flick of its fins and red belly—all about one second ahead of the behavior itself! I wonder if Loeb could have done that? Impressive. Beautiful really. The precision of it is astounding. It doesn't seem to hold much promise for dealing with behavior of more scope but it is elegant work. What about voluntary behavior? The term begs the question, but ethnology doesn't seem the key to dealing with it.

October 26, 1953

Drever has us reading Hebb's *Organization of Behavior* and he is enthused about it. I find the physiological hypothesis fanciful and obtrusive. Drever keeps saying the speculative neurology isn't important anyway, but it is overpowering and gets in the way. On the other hand, the book is coherent. Hebb says "the first object of this book is to present a theory of behavior" That is a big step forward. Even the wrong theory seems better than no theory at all. Hebb writes, "One cannot logically be a determinist in physics and chemistry and biology, and a mystic in psychology." I would add that one cannot have theory, order, and system in physics and chemistry and biology and a lack of those things to the point of disorder in psychology and call it a science. Three cheers for Hebb!

November 4, 1953

Well, I really made a fool of myself. Arrived late for Professor Ritchie's philosophy lecture because it is Guy Fawkes day and kids kept stopping me asking "Penny for the Guy." Ritchie is of the old school and lectures in cap and gown in an amphitheater. He enters through a sliding door behind the lectern, in full regalia, the class stands when the door opens and remains standing until he says "Be seated." They say he used to say, "Gentlemen, please be seated," and continued to do so after women were admitted over his strong objections. He refused to acknowledge the women, the students boycotted his class, he dropped the "Gentlemen" rather than add "Ladies" and now simply says "Be seated"—with no please! I walked in late, he

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stopped lecturing and stood in silence staring at me until I crept into a seat. At that point in stentorian voice he said, "Would the American stand and read the plaque on the back of his chair." The plaque commemorated the chair as David Hume's assigned seat during his student days. Damn, did I pick the wrong seat. Lesson: Cut the class rather than be late.

November 10, 1953

Drever is an interesting man as was his father whom he talks a lot about. The father grew up in the town of Stromness in the Orkney Islands. He was a precocious student and at 14 was chosen for the pupil-teacher system that existed in Scotland at the time (1887). A fascinating system. The best students taught others under the guidance of the master teacher and were paid 10£ a year! Wonder what that was worth 65 years ago? The procedure is much discussed in the pedagogical lab and Drever adds reality to it. Wonder why they stopped using the system? The father became the second person to hold the George Combe Lectureship in Psychology once psychology split off from Logic and Metaphysics, and the first Professor of Psychology when a Chair in Psychology was established in 1931—the year I was born. It is fun to note that the psychology department got started because of that Lectureship funded from the bequest of George Combe for "the education of the poorer classes in the laws of mental and bodily health." George Combe was a famous phrenologist! The current James Drever, the son, is the second person to hold the Chair in psychology. That is the history of where I am studying.

November 12, 1953

Mary Collins' test and measurement course is a good one. Spend a lot of hands-on time at the pedagogical laboratory at Moray House. The tests and analyses are sophisticated. In some cases, testers have measured everyone in Scotland, like all 5th graders, and so can deal with population measures rather than samples. Wonder if the work of Spearman, Thurstone, etc. is related to this advantage? Is this why the British seem to be so advanced in this area? They can build statistical models because they know the population parameters. If I have to give one more Stanford-Binet intelligence test I'll quit. The protocols don't offer much latitude, which is the point, but it's boring after the first five or six. Imagine giving this damn test as a way of life to make a living. Dr. Collins is a stickler for precision to those protocols. Oh yes, there is a British revision of the Terman revision that puts math problems in pounds, shillings and pence. They should have been so considerate of me.

February 2, 1954

Am back from the long holiday vacation. Met Chace and Peirce in London for Christmas and then spent most of January in Paris with them. It sure was good to eat again. [Britain was still on food rationing after the war. We were allowed one egg one week, two eggs the next, about one hamburg ball a week and all the fish and

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cabbage you could eat. It was the only time in my life I was thin. My friends Chace and Peirce were studying at the Sorbonne so provided a place to stay in Paris.] Took with me Skinner's new book *Science and Human Behavior*. Great book. Very excited by it. His three-term contingency is brilliant, ubiquitous, a powerful formulation. Makes sense of so much; I see it everywhere. It puts so much in order. Recalling Alexander Pope's comment that "order is chaos misunderstood," I'll be cautious but this is the first time I have seen both order *and significance* in psychology. Will read the book a second time next week.

February 10, 1954

Discussed Skinner's book with Drever. Enthusiastic he isn't. Somewhat disdainful and patronizing about American psychology in general—as obsessed by the rat. He should have studied with Munn! American psych is not "thoughtful" seems to be the message.

Then went to a lecture in the history dept. Some friends had tipped me off that the lecture was on the American Revolution. A rather different interpretation from what I heard at old Central High. There was an extensive discussion of supply lines (to their disadvantage), the proper rules of fighting (we didn't fight fair, we weren't gentlemen, again to their disadvantage), etc. The conclusion seemed to be that the British had, at a minimum, a moral victory! Fascinating. It was rather like listening to a serious lecture on the advantages of non-stick glue.

It was my day with Alice in Wonderland.

February 14, 1954

Received the questions I have to write on for my Honours paper in philosophy.

1. Consider the value of the criticism that Hume confused psychology with philosophy.
2. Was Spinoza successful in proving that there is nothing contingent in the universe?
3. Is there a place for the a priori in psychology?

Am sure the first question is residual from my walking in late (and picking the wrong seat). Now see the world as nothing but contingencies, so Ritchie is going to get a healthy dose of Skinner in the second answer. I know that's not what he wants. Generally framing the question determines the answer—does he want "copy speech" or original response? We'll see. The Kantian claim that philosophy can discover the a priori structure of any possible inquiry will meet Skinner too. We can't deal with the world raw, uncategorized, and the notion of functional classes is brilliant. It won't satisfy Ritchie, know what he'll counter: He will say there is more than this solution, and still more assumptions, so will follow with a counter to the critique. The arguments themselves are determined by the law of effect and must end there. This is fun.

[I wish I had these papers now. They were written with passion if not profundity. I do recall his comments ended with the conclusion of Verdi's *Falstaff*: Tutti gabbati, tutti gabbati—It's all a trick.]

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February 25, 1954

Am supposed to be reading Vernon's *Structure of Human Abilities* for next week's class, but keep putting it aside and reading Skinner's *Behavior of Organisms*. The section on the generic nature of stimulus and response is great. The concept of a class is important. No one here seems very interested in my enthusiasm, tolerant at best. I deal with every problem in terms of the three-term-contingency and fear I'm becoming a nuisance. There is a young instructor up from Cambridge, Ian Hunter, who seems receptive but he has little standing, being the "new kid", and he doesn't know much more about operant behavior than I do. There is no point to stay. The other students want to sit all night and discuss Pascal's "It is not certain that everything is uncertain." Conundrums, aphorisms or whatever are fun, but that's not where I'm at now. Sometimes I think British psychology would like to go back into philosophy and metaphysics. All generalizations are false, including this one.

March 22, 1954

I gather I can get to study what I want at Harvard, Columbia, or Brown. Brown is too much like going home to Fall River. Applied to Harvard and Columbia. Will choose Columbia if I get in as I'd like to be in New York. Some sadness at leaving Scotland. My 90-year-old aunt Mary (my great-grandfather's sister) has taught her budgie [what we call a parakeet or love bird] to say "Wee Gil's gang a'wah" [Gil's going away] in a broad Scottish accent. Remarkable what that bird can say. Wonder how she does it?

September 30, 1954

Columbia University, New York

Had my first class at Columbia, experimental psychology with Professor Mueller. Didn't understand a word. He said something about ess - dee and, worst of all, some student seemed to understand and asked about ess delta. I have no idea what they are talking about and am scared silly. [I was not familiar with the terms S^D and S^A for the components of discrimination training.]

October 5, 1954

Was invited in to meet the Chairman, Professor Garrett, and sign the book as a new graduate student. He is also the Prof for my statistics class. With a southern drawl, he asked how a nice southern boy like me could have a name like Sherman. [As I was in Scotland I had used my parents address, at the time Alexandria, VA, on my applications.] I clarified the matter, explaining I came from Massachusetts, am related to the General, and the reception changed from southern hospitality to a decided chill. He was clearly disappointed. I came away with the impression that I might not have been admitted without my fraudulent southern credentials.

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October 10, 1954

Last week ran into a group of senior graduate students talking to Prof. Mueller in the hall. He called them Don, Nat and Bill as did I. Have seen and chatted with all three in the following days and all are friendly. Now find out the chap I have been greeting as Nat is Professor Schoenfeld, a highly regarded Prof who everyone holds in awe with just a touch of fear. Students do NOT call him Nat. Seems too late to change now. [During the rest of my graduate student days I startled, even impressed, many a fellow student by greeting Schoenfeld as Nat. It was all an accident, but as a result I never went through the intimidation stage most seem to have felt. Nat and I became good friends over the years, a man I still regard with respect and affection, and perhaps at last with a touch of awe. A formidable man and a great influence in my life.

The other two assumed graduate students were Don Moser and Bill Cumming. Don got his degree, went off to start an introductory lab at Dickenson College but died of leukemia a couple of years later. Bill Cumming, another formidable man, became a professor at Columbia but died after a brief but impressive career. His death was a significant loss to the discipline.]

October 15, 1954

This is a wonderful place. Everyone seems to work hard and enjoy every moment of it. The department appears in fact to be three departments: 1) the operant conditioners on the second floor [of Schermerhorn Hall]; 2) the psychophysics-vision people on the third floor; and 3) the third force of "others," without a focus theoretically—or geographically—within the building. The learning-theory group is Keller, Schoenfeld, Hefferline and a large number of senior graduate students. Lots of research going on, dissertations, the vivarium is the social center, Mike Riordan, the animal keeper, keeping a pot of coffee, and everyone involved in teaching the introductory undergraduate course where each student has his own rat. A big production. The psychophysics group is Professors Graham, Mueller and their research associate Yun Hsia, heading another group of grad students doing dissertation research. Both groups are active.

The third group is everyone not affiliated with either of the first two, Garrett, Klineberg, Woodworth, Warden, the clinical professors Zubin and Landis, and probably some others I don't know yet. The two research groups are where the action is. As first year grad students we are somewhat locked out. It is already clear that our focus is on the comps. The system at Columbia is to take in a large group of MA candidates (It seems almost anyone who applies or comes this far up Broadway. Perhaps I was wrong about needing to be a southern gentleman to get in. But that conversation with Garrett still seemed to have some social attitudes buried in it.). There are about 30 of us, and we are told bluntly only about 10% pass the Comprehensive Exams and can go on to the Ph.D. It is really a year studying for those exams, the pressure (and competition) is really on. There is so much to read. We all know only 3 or 4 of us will make it.

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October 20, 1954

There is so much to read. Thank God the psych library is upstairs on the 6th floor separate from the general university library, and every article has been cross-referenced with loving care in the card catalogue by Mrs. Tunnell. She is so helpful. They say it is the best psych library in the country. So different from Edinburgh, no card catalogue, just 26 huge volumes, A-Z, where books are listed in the handwriting of whatever librarian was on duty when the book came in—for hundreds of years. A horror scene.

As well as assigned reading, have read "K & S" (Keller and Schoenfeld's *Principles of Psychology*). It is the basis for the intro course and all discussions on the 2nd floor. This is what an intro text should be. *At last*. Thought I understood Skinner but now it is clearer. The bar press as simply a *representative* sample of behavior. The advantages of rate as a measure of behavior. Wonder if the strength of a secondary reinforcer (S') varies with the type of primary reinforcement? Not an easy experiment to do. How do we equate drives, the amount of reinforcement variable (one pellet doesn't necessarily equal one drop of water) etc.? The number of experiments "K and S" generates is infinite.

November 2, 1954

One course is a joke. The famous Otto Klineberg is away again doing something for the United Nations in Paris which I gather he prefers to do. A guest Prof, by the name of Hubert Bonner, is here from Ohio Wesleyan to teach Social Psychology. We call him "Hugh, the Midwestern Flash." For starters, he wrote the text. Remember Munn. I said I wouldn't do this again, but no choice. Next, the text is *Social Psychology: An Interdisciplinary Approach*. If there is anything this hard-core group is not going to go for it is a soft-headed "interdisciplinary approach." Third, it is clear he hasn't read a word of Skinner or done a psychophysical experiment, so he isn't going to please those of us aspiring to either the 2nd or 3rd floor group—and we are tough, remember only 4 will make it. One group hits him on the precision of measurement (Does that meet the criterion for a ratio scale?). The other on the precision of definition (Could you give us an operational definition of that term?). Evelyn West (a second-floor person) brings her knitting and clicks her needles more and more loudly as he wanders off into sloppy thinking. He talks louder, she knits louder, until the inevitable question: "Professor, could you define that for us in a way that doesn't involve intervening variables or hypothetical constructs?" The man is lost. He puts data on the board and Lee Cerf (a 3rd floor person) will say, "Professor, do you realize what would happen if we plotted that on a log [logarithmic] scale?" It is really rather pathetic. He arrived in class with a broken leg in a cast the other day and Evelyn accused him of playing for sympathy! Clearly, he is here because Garrett is the editor of his book. I don't think he will forget Columbia. The class is a shambles and I almost feel sorry for him.

November 5, 1954

Am somewhat lost in Garrett's statistics course. It seems whatever the question

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about scores, or errors, or differences between means, you just assume another normal curve, divide by the standard deviation and create a new measure, t-test or whatever. I wonder if there is an infinite regression of dividing things by sigma? We could create another irrational number like the golden section 0.61802 ... which I use as my lucky number. Thought I understood statistics at Edinburgh, but the clear waters are getting muddy. Oh yes, Garrett is using his own textbook. That again!

November 30, 1954

So, there are two joke courses. They provide a relief from stat and experimental—which are not jokes. It is C.J. Warden's course in Comparative Psychology. He started the first day by telling us, "This will be a great course because I bought my notes from Harvey Carr"—which is a little strange to admit. (Had Carr bought his notes from Dewey and Angell who brought them to the University of Chicago after buying them from William James? These may be the famous William James lectures!) With the notes came a set of slides showing *every maze ever constructed*. One look at maze data and it is clear why frequency is such an advance as a measure. Once the raw data has been transformed into Vincent scores, Hunter units, Hilgard units or Loucks' units any contact with behavior has been lost. Destroy the relation between behavior and its controlling variables and it all becomes actuarial. We have strangled data this way in the lab part of the course. C.J.'s grad student assistant, Bob Thompson, has us do a series of experiments with rats, pigeons and cats, using mazes, the Columbia Obstruction Box, and other strange devices. Looked back in Munn's Handbook which says "... the revival of the obstruction method—and its standardization at Columbia, deserve to stand as important land-marks in the evolution of experimental techniques for the study of animal drives." Can you believe it? It is clear Thompson's heart isn't in this.

It is also clear Warden doesn't think much of current learning theories. He dismissed Hull with the comment, "I never thought much of Hull, he was such a short man." He doesn't think much of Skinner either—told us "next week we would hear about 'the op-er-ant.'" Then he had Bob Thompson give the lecture and he didn't come. Bob did a fine job, with enthusiasm.

Wish we didn't have to spend so much time destroying data I don't believe in, in the first place. Spend hours in the stat lab when I should be in the library. [The calculating machines of the day were hand-cranked affairs quite unbelievable in today's world. They were positively medieval and the lab a noisy torture chamber. In many cases the machines would jam; you could get answers quicker by counting on your fingers. We all spent hours and hours there cranking away.]

April 5, 1955

Haven't written a word in my diary for months. Library, lab, read, do canned experiments, calculate data, write reports, read some more. That's life. The Comp exams coming up soon. We are all scared. See ourselves not as candidates for a degree but for elimination.

Don Moser let me into the Psych 1-2 lab and worked through the whole series

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of experiments done in the intro course. There is no way to understand reinforcement theory without having shaped the behavior of an animal, brought the behavior under discriminative control, and be able to turn the behavior on and off "at will." A powerful experience. Nothing theoretical about it.

Feel as ready as I can be. Must continue, here I hope, but elsewhere if necessary.

May 20, 1955

Passed the Comps. Think five of us did: Bob Clark, Al Weisman, Peg Strehan, Lee Cerf-Beare, and myself. [Looking back I think a couple more passed but I didn't know that then and can't remember now.] Took off several days to enjoy New York, go home to Fall River. Now back. Am losing some good friends, among them my roommate. Life will be different. The pressure is off.

Warden asked me to be his T.A. for next year—\$1,400 for the year. Feel funny about this. The experiments are ridiculous and the data' treatment outrageous, his lectures get worse, he is laughed at by the students, and he is not treated very well by the faculty. On the other hand, he is a nice old man (I wish he wouldn't always introduce his wife as the third Mrs. Warden) with a distinguished record. His three-volume work, *Comparative Psychology*, with Jenkins and Warner is monumental. He is retiring at the end of next year and he should be allowed to go with dignity. As his last T.A., I'm very afraid he'll want me to buy Harvey Carr's notes! p understand they were bought by Helmut Adler. Actually, I now wish I had them for historical purposes.]

Connie Mueller asked me to be his T.A. for the experimental course for the first-year grad students. Am honored by that. Will do both; that's \$2,800 and should be able to make it on that.

September 20, 1955

So, here I am trying to learn about reinforcement theory but teaching about mazes and psycho physical methods! So be it. It will be a busy year, with several big courses: The experimental course on visual research with Prof. Graham, the quantitative methods course with Graham, the advanced learning theory course with Schoenfeld, and physiological psychology with Connie Mueller. A beautiful program.

November 20, 1955

Was assigned the topic of "punishment" for Schoenfeld's seminar. He has torn to shreds several people during or after their reports. Remember poor Peg breaking into tears. Decided I had to read *every* paper in the literature on the topic no matter how tangential. There are several hundred and read every damn one of them, cross-categorized them in terms of organism studied, type of punishment used, nature of results, behavioral measure used, and my own estimate of the studies' merits. It took a month but was worth it. Schoenfeld did not attack. Everyone seemed impressed by that if not by my efforts.

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Once read a review of books about Mozart. The reviewer mentioned a book on Mozart's instrumental music written by Cuthbert Girdlestone "not so much for its musical substance as to keep that wonderful name in print." In that vein, I'll note only the study by Curtis Tinkelpaugh. It added nothing to our understanding of punishment but now I'll never forget him. Out of the whole lot there are only about 10 important papers, the best by Jim Dinsmoor. So, I have two names to remember.

December 10, 1955

Professor Graham is impressive. He seems bashful about his teaching, the quantitative methods course is lethal, but when talking about visual research the man is a master. He can make one see the elegance and simplicity of a complex research study like no one else. He presents the work of Hartline, or Hecht, or Wald, or Granit and there is silence. Will any of us ever forget the study by Hecht, Schlaer and Perrin ("Energy, quanta, and vision." *J. gen. Physiol.*, 1942, 25, 819-840). A thing of beauty. Connie Mueller's paper "Numerical transformations in the analysis of experimental data" (*Psych. Bull.*, 1949, 46, 198-223) in Graham's hands becomes a gem. It is tough going but superb. The result is a reverence for the parametric study.

[I still think that if there was anything unique or special about the Columbia Ph.D.'s of this period it was that the students of Keller and/or Schoenfeld were leavened by Clarence Graham—and also vice versa.]

March 5, 1956

In Connie Mueller's physiological psych course (a fine course, but don't think physiology is the way to go to understand complex repertoires) found a study in Morgan and Steller (page 530) by Gellhorn and Minatoya that is fascinating. Rats 1) were conditioned to run along an electrified grill when a buzzer sounded, 2) then extinguished by leaving out shock, 3) then given insulin shock convulsions—the extinguished response recovers and takes a long time to get fully extinguished again. They write, "In fact they may not extinguish after several months of presenting the conditioned stimulus alone." Strange. As soon as the psych 1-2 students are finished with their rats I can have them and some extras that are normally done away with. I'll work out an LD 50 [lethal convulsive dose of insulin from which 50% of the animals recover] using the trained animals. With the extra untrained rats will condition and then extinguish a bar press, induce insulin shock convulsions and we shall see. It could be the basis for a dissertation.

[Worked on this for months. First, there was a great problem getting the LD 50 dosage and lost a lot of animals. Then spent hours and hours conditioning and extinguishing animals that then did not live through the insulin shocks at the determined dose. Finally gave it up. To make matters worse, I did get *one* rat through all the procedures, the extinguished response recovered, persisted for days, yielding an extinction curve with ten times the number of responses emitted in the original extinction. If I had persisted I might still be working on my dissertation—but it still intrigues me.]

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September 10, 1956

Graham is now Chairman. Went and explained I only need four more courses. Want to take Woodworm's "Dynamics of Behavior" as it is to be the last time he'll teach it, and Joe Notterman is coming as a guest prof and everyone says his will be a good course but that leaves me two courses short. Requested that I be given two courses of credit for my year's work at Edinburgh. Graham suggested I solve the problem by taking two more courses. I explained the only ones left were a social psych course with Klineberg and some abnormal psych courses. He then granted my request without further hesitation! Bless him. Went and withdrew from Klineberg's course for which I was pre-registered. Otto was not pleased.

At last I am a T.A. for the lab of Keller's undergraduate course. The job I always wanted. (This year I got \$1,500, that's an advancement.) Then the Manhattan School of Music called and they need a last minute replacement to teach Intro Psych—got the job, \$400 for the semester, so again am eking out a living.

So, it will be a busy year, two courses to take, two to teach (the Manhattan School, the first one on my own) and time to get on with thinking about a dissertation.

October 1956 (undated)

Woodworm is such a great old man, almost 90, a legend really. I have been reading his books since the experimental course at Bowdoin with Parker Johnson. He is a bit frail so he starts each evening class with a quiz (which keeps us up to date on our reading). His companion, Mrs. Tunnell, (the lovely library lady) administers the text while the professor rests. Then Woodworm appears, reads the answers to the quiz (the papers already collected), discusses the answers, takes questions, gives about a half-hour lecture, and by then, a little tired, he retires. Not a bad way to give a course.

Last night, after reading the answers, one student objected saying, "Professor, reading from Woodworm and Schlosberg on page 'x' you say." At this point his eyes sparkled, actually lit up, he pulled himself to full height, perhaps 5' 2" now, and with a devilish grin quickly broke into her sentence with, "You have a mighty fine source there." It was so great the way he did it, the class broke into applause.

Clearly, the old man would like to see the controversies within the discipline somehow resolved under some sweeping general statement that would please everyone, and harmony would reign, everyone living happily ever after! Such comprehensive generalizations get more bland as they get more broad, losing in depth what they gain in width, but you come away with the feeling that it is a kind and generous thing he is trying to do. It is like studying with Wundt, Fechner or the great Helmholtz himself. Everyone treats him with great respect.

October 15, 1956

I have a real problem at Manhattan School of Music. To begin with, *not one* student really wants to take the course—they are there to study music, they are busy

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studying music theory, composition, practicing rehearsing, performing on their instruments. This Course is one of their limited; much subordinated, much resented academic requirements. They don't want *it*, they don't need it (except as a requirement), and it is an intrusion on their busy schedules. There are 107 people in the class.

It reminds me of Keller's wonderful remark. Don Moser was trying to do a dissertation using turtles. Keller had been working with him. Keller came into the hall, somewhat flushed, and announced with obvious irritation that, "It is over, we are giving up." When asked why, he said, in one of the most succinct statements in the history of psychology, "Those damn turtles, there's nothing I've got that they want." With that he returned to his office and slammed the door.

So, that's the story. There is nothing I've got that these students want— other than that final passing grade. Why would an aspiring opera singer even care if it is an A, B, C, or D? All she wants is to avoid *an* F. So, it is an avoidance response, with a minimal reinforcer, that is too long delayed to maintain current behavior. A dreadful instructional problem.

October 16, 1936

Manhattan School of Music is a disaster. The kids are great and keep offering me free tickets to every concert in town, but they have zero interest in psychology. To make matters worse, whoever was to teach the course originally had ordered the textbook and it *is too* late to change. It's Floyd Ruch's *Intro Psychology*, a bloody duplicate of Munn (what isn't—except for K and S?). I swore I'd never impose such a text on anyone: it's a mess. I'm taking my lectures from *Science and Human Behavior*, trying *to* spice things up, but these kids are already semi-professional performers, a hard audience to perforin for, and that's what they expect—a performance.

The Psych 1-2 lab, on the other hand is just great. There are a team of assistants (Bob Clark, Al Wiesman, Dorothy Hubbard, and myself) with George Geis as the chief T.A. Keller is in the lab a lot. The *lab* sequence has been refined over the last few years and works beautifully. Wish I had had this course as my introduction to psychology—I might have gone *to* MIT and become a physicist!

Keller would never let me take one of his courses as he said I already knew the material, but really get to learn from him in the lab. He still gets excited every time a student succeeds in getting the rat to press the bar— almost as if he didn't expect it to work!

October 17, 1956

Am obsessed With the Manhattan School. There has to be a better way to teach. Have taken a couple of education courses along the way (everyone advised against it) but *nothing* there helps me one bit. There has to be a literature on how to teach, but don't think lecturing to large (uninterested) groups is the way to do it. Teaching in the Psych 1-2 lab is so easy. Perhaps if I had some T.A.'s, or even Mrs. Tunnell, I could break things up. Or the Scottish system a la Drever.

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Am now starting each class with a quiz, like Woodworm, which helps a bit. The quiz questions, while based on that damn text, are designed to raise one general issue, then I lecture on that issue. One theme per lecture. Last time my general question was "What kind of answer will you accept?" Tried to sell them phrenology (let's hear it for the George Combe Lectureship), astrology, Hippocrates' four *humors*, Kretschmer's body types (they classed me as a "pyknic" body type), etc. Gradually we worked toward what a scientific answer might be—except for those who were perfectly willing to settle for astrology and forget the rest of the course!

It was fun but 1) don't know as I can keep this up, and 2) it's still no way to teach. Perhaps I've been too critical of some of my teachers. I think it was Sophocles who said you don't learn something til you try to teach it. I'd like to learn how to teach this group but I don't think that means knowing my subject matter better—although that's happening. Wish I had full time to work on this course and think about instruction. These kids do a lot of their studying one-on-one with an instructor, whether for voice, piano, violin or whatever. They are accustomed to that. I recall I liked my piano lessons better than school. Practice until you get it right was the method.

November, 1956 (undated)

Skinner came to Columbia to give a colloquium on his forthcoming book *Verbal Behavior*. We knew a fair amount about it as Ralph Hefferline had attended Skinner's William James Lectures on the subject at Harvard in 1948, and brought back copious notes which have been circulating here in mimeographed form. It was tough to follow. It started off fine but the *autoclitic* is a difficult concept. Keller is positive about the approach for sure, but skeptical about the autoclitic. There has to be something more than *mands*, *tacts*, and *intraverbals* for the account to be adequate, so guess the "autoclitic" is it. That calls for some study. Skinner says the book will be out soon.

Had about 3 minutes to talk with him and asked about my problems at the Manhattan School. He seemed interested, clearly had thought about instruction, suggested he had things to say about it, we were interrupted, that was it.

March 12, 1957

No time. Notterman's class was thought provoking. He talked a lot about servo-mechanisms, positive and negative feedback systems, cybernetics, etc. Is feedback the function of reinforcement, etc.? Fascinating. Have become rather adept with relay circuitry. If the brain is a big switching circuit we are back to Hebb again. Don't think so. Psychology seems a sucker for models and physical metaphors from Descartes' pneumatic systems on down. Here we go again.

Met Rosemary Pierrel, a prof at Barnard. She is building a relay system to study auditory generalization and I offered to help. Some thought I might be able to do a dissertation in her lab. Forget insulin shock; I want my animals to live at least until I get my data. Probably will do something on schedules of reinforcement.

Spent a weekend with Dick Herrnstein at Harvard in the lab where Ferster and

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Skinner did the work for *Schedules of Reinforcement*. Have some ideas. Next week the Brown chaps [Ralph Morrison and Al Granda] will be here with me. [As the psych faculties at Columbia, Brown and Harvard were friends and close professional associates (Keller and Skinner, Graham and Riggs, Woodworth and Schlosberg, and Pierrel, a Brown Ph.D.), the graduate students from the three universities became friends and visited each other. It was during these visits to Cambridge and Providence that I got to know Skinner, S.S. Stevens, and E.G. Boring at Harvard, and Harold Schlosberg, Carl Pfaffmann, and Lorrin Riggs at Brown. It was a very special relationship between the three departments.]

Fall, 1957 (undated)

Have been appointed a Lecturer in Psychology in the School of General Studies and assigned to teach G.S. Psychology R2, section 1; \$425. We are assigned the text: Greg Kimble's *Principles of General Psychology*. It's another "cafeteria feeding" intro text but better than most. There is a (slight) theme of a behavioral perspective. I can live with it. Have my lectures from Manhattan School of Music. Managed to get through that course with some dignity but no real progress on how to teach. Want to explore that when Ph.D. pressures are off.

Am starting my thesis research in Posi's [Pierrel] lab at Barnard. Have decided to study Fixed Interval Behavior. There is Paul Wilson's dissertation on response rates on FI's [Fixed Intervals] of different lengths, but that again is averaged group data. Must in research take seriously the notion of looking at the behavior of individual organisms so will do that in the case of FI schedules.

So, will teach my course and otherwise live in the lab. That's it — that's enough.

September 8, 1958

Have been hired as an instructor at Barnard (\$5,000—I'm rich). Am replacing a long line of Columbia grad students to be hired by Prof Youtz [the chairman of the Psych Dept. at Barnard]. He has a bad reputation in the community. Know some of my predecessors (Bill Cumming, Don Cook), so have been warned. Have finished taking thesis data, so will have the year to write—except for teaching statistics, a section of intro, and social psychology (of all things).

October, 1958 (undated)

Wrote to Skinner and Ferster asking permission to reproduce one of their Figures from *Schedules of Reinforcement* showing FI performances. Had a brief note from Ferster saying, "Dear Gil, Feel free to use any schedule of reinforcement you want. Sincerely, Charles." Wonder if anyone else in the world has such carte blanche permission to use any schedule of reinforcement any time they want?!

November 2, 1958

Youtz came into the psych office [at Barnard] the other day carrying a dinner

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bell. In response to our questions, he explained he was doing a Pavlovian. conditioning experiment in class. He would ring the bell, ask the class to *imagine* lemonjuice being put on the tongue, and attempt to condition salivation to the bell. It was quite a discussion. It is not that verbal behavior doesn't have its consequences, that manding imagery doesn't have its consequences, but they are different from respondent conditioning. The discussion, that describing contingencies is not the same as being subjected to those contingencies, didn't seem to sink in.

December 10, 1958

In the long hours hanging around the lab collecting data Posi and I decided to build a demonstration of chaining behavior. It is inspired by Thom Verhave's wonderful Bozo box where a rat went through a long series of responses, swinging in baskets, climbing ladders, etc. Our Barnabus (named in honor of Barney Keeney, president of Brown University) starts by pressing a bar for food pellets with a buzzer going. When the buzzer stops, the animal climbs a spiral staircase, pushes down and crosses a drawbridge (second level), climbs a ladder to the third level, pulls a chain to bring in a go-cart, paddle wheels it through a tunnel, climbs a flight of stairs to the fourth level, runs through a tube to an elevator, raises the Columbia flag and rides down to the first level to press the bar again. Try to teach that forwards!

Barnabus is becoming quite famous. He has been on the "Mr. Wizard" TV show, a big spread in the *New York Times*, and a couple of days ago we were invited to give a colloquium with him at the University of Delaware. We drove across the George Washington bridge and Posi, with no shame, asked the tolltaker, "Which way is Delaware?" That is building a chain forward!

That reminds me, drove to EPA [Eastern Psychological Association] meeting in Atlantic City with Zubin, Schoenfeld, and Tryon (of cognitive map and maze "bright"—maze "dull" rats fame). We got lost. Tryon kept saying, "We need to stop for instructions." Nat kept saying, "I have a feel for it, I think we're O.K., take a left up here." Caught between Nat's cognitive map, Tryon's desire to get some S-R specifications, Zubin (the clinical psychologist), who was driving, came near to a nervous breakdown. Talk about role reversal!

So, Barnabus certainly makes the point about building response chains. Response chains are clear in a lot of verbal behavior, intraverbals—try saying the alphabet backwards. Kierkegaard said, "... life must be understood backwards. But—it must be lived forwards." All of life is a chain we are forced to deal with the wrong way! [Years later I was teaching ASL (American Sign Language). In teaching the manual alphabet tried teaching it forward (the finger configuration for A, B, C, then A, B, C, D, E, F etc. vs. X, Y, Z, then U, V, W, X, Y, Z, etc.) The backward procedure is learned *much* more rapidly.]

May 20, 1959

Got through my orals, over 4 hours—one of the longest on record, I'm told. Posi, Bill McGill, Bill Cumming, Nat Schoenfeld, and an outsider on the committee. There are some changes (listed as minor—oh, ya) that have to be made *quickly* as am

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leaving with Gram and Gramp for Scotland on the 27th. Look forward to seeing Drever again. Understand he is now Chancellor at University of Aberdeen.

Now that I have my degree have been promoted from Instructor to Assistant Professor at Barnard (\$5,750). Youtz called me in to congratulate me, inform me of my promotion and finished by saying, "Don't buy a house." There is nothing that takes the joy out of a happy moment like knowing your days are numbered!

November, 1959 (undated)

Jimmy Gibson was here (with his wife Eleanor) to give a colloquium at Barnard. His theory of perception is very complicated and don't think the students could follow him—I know the faculty couldn't. After his talk Youtz had invited us all to his house in New Jersey for dinner. Tracy and Howard Kendler, Tom Tighe and his wife, Posi and myself—with Youtz and his wife, a lovely dinner for eight. I happened into the kitchen, there was a large blackboard with the whole evening scheduled: Time of arrival, time to serve dinner, alternate time to serve dinner if second round of drinks is accepted, right through to time of guests' departure. Youtz is big on terminating people.

Once seated for dinner Tracy asked, "Professor Gibson, I know you give a special meaning to the term *stimulus*, could you explain that to me?" Then Jimmy would start, "There is always some discoverable variable in stimulation, of a higher order than studied by sensory physiologists, that determines the perceptual process, etc., etc." He would talk for 5 or 10 minutes. Then Tracy, all excited, would say, "Oh, all you mean is what we might call a compound S°? Is that right?" Jimmy would say "No." Tracy's face would fall. Eleanor [a psychologist whose research was in the area of learning] would say, "Perhaps I can help," and she would proceed to translate from perception terminology to the vocabulary of learning. Tracy would say, "I've got it, you mean ..." Jimmy would say "No," and then talk for 5 or 10 minutes, beginning another cycle: Tracy asking, Jimmy answering, and Eleanor translating. This went on all evening. No progress was made. We left on time—per the schedule on the kitchen blackboard.

April 18, 1960

Have been in a post-dissertation ratio break. Posi and I have been running a full schedule for the generalization studies.

April, 1961 (undated)

Have two generalization papers published and a third almost ready to go. Posi chosen by Barney Keeney to be the next Dean of Pembroke. We are moving our lab to Brown. I'll go there summers. Youtz has informed me next year will be my last at Barnard. Bill Cumming and Don Cook have been very comforting with stories of their own "sturm and drang" times at Barnard. Next year will be a job search. My days at Columbia are over. Wonder what will come next?

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October 1, 1995

Westport Harbor, MA

My diary and notes go on up to the present, the years in Brazil, at Arizona State University and at Georgetown, more "fires" and "witch hunts." But that is for another time, the next chapter.

For the moment I would. add only two things:

- 1, While there was a brief period of improvement, most introductory psychology textbooks are not very different today from those that troubled me forty-five years ago. This is disappointing.
2. Perhaps I should have, listened to what Leonard Woolf said, rather than follow what he did.