

15 A Traveling Scholar in Wartime

1914–1915

After staying in Munich a few weeks, I went on to Göttingen before the beginning of term, to take part in a psychological congress which was being held there and to see my old friend Elliott, the Harvard psychologist, who had come there to participate in it. I have not much recollection of the congress, but I found the town a delightful medieval gem, with the circuit of its old walls almost complete.

For what seemed to me a ridiculously small sum, I immatriculated at the university and began to search for a lodging and for a vegetarian restaurant at which to eat my meals. I found my lodging just outside the walls at the house of a *Fräulein Büschen*. It was a half-timbered villa in Swiss style, and my room, though dark, was adequate. *Fräulein Büschen*, who had been a music teacher, attended to the business side of the establishment. She managed this very competently, and left the matter of our breakfast and other domestic needs to her sister, who did not aspire to the social distinction claimed by the music teacher. Somewhere around the establishment there was an obscure brother, who had been trained as a dentist but who did not seem to practice that art.

I remember at least one party the *Büschens* gave for their student lodgers, which was attended by some nice girls from the neighborhood. I particularly remember the shock to my 1914 New England susceptibilities when I found that the whole company, both men and women, were smoking cigarettes and were not averse to drinking to the point of becoming slightly tipsy.

I found my vegetarian restaurant in the Theaterstrasse, in the home of a *Frau Bauer*. She was a widow with a considerable number of daughters of varying ages, who assisted her and the cook. The girls waited barefoot at the table, for vegetarianism was not the only respect in which the *Bauers* departed from the norm. They were clothes-reform people, youth-movement people, health faddists, and anti-Semites as well. It was in their

restaurant that I first saw that vile sheet *Hammer*, which even at that epoch already contained all the lies and blasphemies that Hitler and Goebbels disseminated so disastrously at a later period.

Bigoted as they were, the Bauers were not entirely bad. Their food was good and cheap, and they were personally amiable enough. They served an oatmeal preparation with the uninviting name of *Haferschleimsuppe*, or "oat slime soup." It was inexpensive and filling.

I often wonder whether the poor Bauers ever realized what serpents they had taken to their bosom in the person of myself and a young Scottish mathematical physicist by the name of Hyman Levy. Levy, who is now a distinguished professor at the Imperial College of Science and Technology in London, notwithstanding his impeccable Glasgow accent, was, like myself, just what his name purported him to be; and yet we two Jewish sons of perdition defied the wrath of the anti-Semitic periodicals about us and ate, nay even enjoyed, the cheap and savory meals prepared for us. When I think that in addition to his Jewishness, Professor Levy has become a bulwark of the Left in English politics, I imagine that old mother Bauer, if indeed she be dead, is turning cartwheels in her grave.

Service was very slow in the Bauer restaurant. We used to take our plates out to the cook in the kitchen and have her fill them for us from the pots on the stove. This informality was possible because we were a happy-go-lucky, impecunious mixture of Germans and Americans, Britons and Russians, and the low prices attracted many of us who had no fads or dietary interest at all. We used to read our papers there.

The *Kneipen* or drinking bouts of the German students are well known. We too—the English and the Americans—had our *Kneipen* at the meetings of two separate but commensal societies known as the British and the American Colonies. The heads of these two colonies were called the Patriarchs, and Levy was the British Patriarch. The two clubs occupied a room above the Franziskaner Restaurant. The beer supply was steady and unflinching, and the floor was on such a slant that navigation was difficult, even without a cargo of beer. We shared a piano, a *Kommersbuch*, or German students' song book, and a Scottish Students' Song Book, which was Levy's personal property. Our meetings were long, moist, and harmonious. We paid our respects to the land that had welcomed us as well as to the lands that had fostered us by singing indiscriminately in English and in German. We were the rowdiest *Kneipe* in town and had been compelled to leave two or three former quarters by the protest of the proprietor or of the police.

There was one member whose name I shall not mention out of respect to such of his kinsmen as may be alive, though no contemporary Göttinger

can ever forget him. It was not Early, though that is what I shall call him. Early was the son of an American publisher of hymn books, and he seemed determined to live down his family's good name. He was married, and his wife and young daughter had the full sympathy of the united colonies. Early had looked around the world for a soft spot to settle, and he had picked Göttingen. In some vague way he had managed to immatriculate at the university, where he had been a student for about ten years, though I had never heard of his taking or attending a course. When any of the American students made a pilgrimage to a nearby city for questionable purposes, it was Early who was their guide, friend, and philosopher.

These activities, I must confess, were only minor manifestations of his personality. The serious purpose of his life was drink. Never did a meeting of the united colonies come to an end but he was drunk as a coot, and some one of us had to see him safely home. I believe he was courteously apologetic on these occasions; and indeed there were about him some curious remnants of a man of breeding.

When I next went to Göttingen in 1925, Early was gone, though his fame had not vanished. I am told that he stayed on well into the First World War but that before we entered that conflict his family had been able to bring him home. In view of his age at that time and of his manner of life, he must long be dead by now. Yet his type will never die; and wherever scholars come together and there is a comfortable life, there will be the blight of the perpetual student. I write this chapter in a room in a hotel just off the Boulevard St. Germain in Paris. Around the corner at this moment dozens of Earlys at the Cafés Flore and Deux Magots are sipping their *apéritifs* and trying to turn the more serious young people into their own likenesses.

I had a varied range of acquaintances in Göttingen. I remember a student who had come from the imperial Russian police and who was studying psychology in connection with his professional career. Another of my philosophical acquaintances was a very bright Russian Jewish boy. On one occasion several of us were at a small party at the house of the landlord of the latter fellow—a retired chief forester with the bluntness that one naturally associates with this profession. I don't remember all the things we discussed, but my philosophic friend asked me to say something about the work of Bertrand Russell. After I had spoken my little piece, my fellow student brought out: "But he doesn't belong to any school."

This was a serious shock to me: that a philosopher should be judged not by the internal implications of his own work but by the company he keeps. It was not, in fact, the first time I had heard of this intellectual gregariousness, which was common in Germany of those times but not confined to it,

but I had never really run up against a first-class example of that sort of pedantry. I had, it is true, encountered the collective manifesto of the American New Realists. But the weakness of this group was so apparent that it seemed to me their solidarity and mutual mental support resembled that of a group of college students returning home after an exciting evening following a great football game: they literally could not stand up alone.

However, when I now saw a similar phenomenon in Germany, it claimed to be more than a protective huddle. The implication was that the privilege of a man to think depended on his having the right friends. Later, when I was to come back to the United States, I found that I myself had the wrong friends. I had studied with great men but they were not the men on the American scene. The Harvard department of mathematics would have none of me because I had learned the greater part of my mathematics at Cambridge and at Göttingen. When the new Princeton department recruited its men after the war, I was already too much of a lone wolf to be welcomed there. It is true that these two universities (together with Chicago) never reached the extremes of some of the German universities in their corporate isolationism, but they have made a good try at it.

I attended a course on group theory given by Professor Landau and a course on differential equations under the great Hilbert. At a later period, when I had become more familiar both with the literature of mathematics and with the techniques of mathematical research, I came to a clearer understanding of these two men. Hilbert was the one really universal genius of mathematics whom I have met. His excursions from number theory to algebra and from integral equations to the foundations of mathematics covered the greater part of known mathematics. There was in his work a complete grasp of tools and techniques; however, he never put into the background the fundamental ideas behind these. He was not so much the manipulative expert as the great mind of mathematics, and his work was comprehensive because his vision was comprehensive. He almost never depended on a mere trick.

Landau, on the other hand, was the chess player *manqué*. He believed in presenting mathematics as a sequence of propositions analogous to moves on a chessboard, and he did not believe in the nonsymbolically expressible part of mathematics that constitutes the ideas and strategy behind the moves. He did not believe in mathematical style, and as a consequence his books, effective as they are, read like a Sears-Roebuck catalog.

It is interesting to contrast them with the work of Hardy, of Littlewood, or Harald Bohr, all of whom wrote in the manner of cultivated and mature

men. Landau, on the other hand, had intelligence, but he had neither taste nor judgment nor philosophical reflection.

It is impossible to mention the Göttingen of those times without referring to Felix Klein, but for one reason or another I did not meet him the semester I was there. I rather believe that he was out of town or in ill health. When I later met him in 1925, I found him very much of an invalid indeed: a grave, bearded man with a blanket over his knees, who sat in his magnificent study and discussed the mathematics of the past as if he were the Muse of mathematical history herself. He was a great mathematician, but by this time in his career he had become rather the *Geheimrat*, the elder statesman of mathematics, than the producer of mathematical ideas. There was something kingly about him which suggested to the career men of American mathematics that they, too, might be kings if they followed in his footsteps, and they treasured his little mannerisms (such as the way he speared his cigar with a penknife) as if by a careful observation of this ritual they might charm their way to greatness. Many years later I became aware that two generations of Harvard mathematicians had learned this trick from him.

Besides these mathematical courses, I sat in Professor Husserl's course on Kant and his seminar on phenomenology. The philosophical courses left very little impression on me, as my German was inadequate for the subtleties of the philosophical language. I got something at the time from the mathematics courses, but much more by that sort of intellectual doubletake that allows one to realize at a later date the importance of what one has already heard but not understood.

Even more important for my intellectual training than the courses were the mathematical reading room and the Mathematical Society. The reading room contained not only what was probably the most complete collection of mathematical books in the world but also the reprints that Felix Klein had been receiving over the years. It was a great experience to browse among the books and the reprints.

The Mathematical Society used to meet in a seminar room, where the tables were covered with the latest numbers of all the mathematical periodicals of the world. Hilbert would preside, and professors and advanced students sat together. Papers were read by students and professors alike, and the discussion was free and incisive.

After the meeting we would traipse across the town to Rohn's café in a beautiful park at the top of a hill overlooking the town. There we would have a mild glass of beer or coffee, and would discuss all sorts of mathematical ideas, both our own and those we had learned in the literature.

There I came to know the younger men, such as Felix Bernstein, who had done some remarkable work in Cantor theory, and little Otto Szasz, with his high-heeled shoes and his bristling red mustache. Szasz was my particular crony and protector, and I am very happy that later when the Hitler regime came in, I was able to help place him in the United States.

The combination of science and social life in the *Nachsitzen* at Rohn's café up the hill was particularly attractive to me. The meetings had a certain resemblance to those of the Harvard Mathematical Society, but the older mathematicians were greater, the younger men were abler and more enthusiastic, and the contacts were freer. The Harvard Mathematical Society meetings were to the Göttingen meetings as near beer is to a deep draft of Münchener.

About this time I had my first experience of the concentrated passionate work that is necessary for new research. I had the idea that a method I had already used to obtain a series of higher logical type from an unspecified system could be used to establish something to replace the postulational treatment for a wide class of systems. The idea occurred to me to generalize the notions of transitivity and permutability, which had already been employed in the theory of series, to systems of a larger number of dimensions. I lived with this idea for a week, leaving my work only for an occasional bite of black bread and Tilsiter cheese, which I bought at a delicatessen store. I soon became aware that I had something good; but the unresolved ideas were a positive torture to me until I had finally written them down and got them out of my system. The resulting paper, which I entitled *Studies in Synthetic Logic*, was one of the best early pieces of research which I had done. It appeared later in the *Proceedings of the Cambridge Philosophical Society* and served as the basis for the Docent Lectures which I gave at Harvard about a year afterward.

Mathematics is too arduous and uninviting a field to appeal to those to whom it does not give great rewards. These rewards are of exactly the same character as those of the artist. To see a difficult, uncompromising material take living shape and meaning is to be Pygmalion, whether the material is stone or hard, stonelike logic. To see meaning and understanding come where there has been no meaning and no understanding is to share the work of a demiurge. No amount of technical correctness and no amount of labor can replace this creative moment, whether in the life of a mathematician or in that of a painter or musician. Bound up with it is a judgment of values, quite parallel to the judgment of values that belongs to the painter or the musician. Neither the artist nor the mathematician may be able to tell you what constitutes the difference between a significant piece of work

and an inflated trifle; but if he is never able to recognize this in his own heart, he is no artist and no mathematician.

Granted an urge to create, one creates with what one has. With me, the particular assets that I have found useful are a memory of a rather wide scope and great permanence and a free-flowing, kaleidoscope-like train of imagination which more or less by itself gives me a consecutive view of the possibilities of a fairly complicated intellectual situation. The great strain on the memory in mathematical work is for me not so much the retention of a vast mass of fact in the literature as of the simultaneous aspects of the particular problem on which I have been working and of the conversion of my fleeting impressions into something permanent enough to have a place in memory. For I have found that if I have been able to cram all my past ideas of what the problem really involves into a single comprehensive impression, the problem is more than half solved. What remains to be done is very often the casting aside of those aspects of the group of ideas that are not germane to the solution of the problem. This rejection of the irrelevant and purification of the relevant I can do best at moments in which I have a minimum of outside impressions. Very often these moments seem to arise on waking up; but probably this really means that sometime during the night I have undergone the process of deconfusion which is necessary to establish my ideas. I am quite certain that at least a part of this process can take place during what one would ordinarily describe as sleep, and in the form of a dream. It is probably more usual for it to take place in the so-called hypnoidal state in which one is awaiting sleep, and it is closely associated with those hypnagogic images which have some of the sensory solidity of hallucinations but which, unlike hallucinations, may be manipulated more or less at the will of the subject. The usefulness of these images is that in a situation in which the main ideas are not yet sufficiently differentiated to make recourse to symbolism easy and natural, they furnish a sort of improvised symbolism which may carry one through the stages until an ordinary symbolism becomes possible and appropriate. Indeed, I have found that there are other mental elements that may readily lend themselves for preliminary symbolic use in the solidification of ideas in mathematics. On one occasion during a bout with pneumonia, I was delirious and in considerable pain. But the hallucinations of my delirium and the vague reactions of pain became associated in my mind with some of the difficulties yet hounding me in an incompletely solved problem. I identified my suffering with the very real malaise that one feels when a group of ideas should fit together and yet cannot be brought together. However, this very identification gave

me sufficient markers for my problem to enable me to make some real progress in it during my illness.

But life in Göttingen was not all research for me. I needed outdoor exercise, and I took my tramps with my English and American colleagues in the woods south of Göttingen and in the region of Hanover-Münden. My favorite lunch tidbit may seem rather indigestible, but it was cool and delightful: a Tilsiter cheese sandwich, a dill pickle, a glass of lager beer, and a raspberry ice.

There were many interesting things to see in Göttingen. There was a fair on the Walkenmühlenwiese, near our favorite swimminghole in the river Leine; and we were delighted to see the side shows and to hear the barkers of just the sort I had known at a New England carnival, against this unfamiliar background. I remember the different sorts of beer which I furtively tasted at the local Automat, and the bathhouse with its different classes of baths and its ample towels of the more expensive grades. I remember the two-hour classes, and the little buffet at which we bought sandwiches and Leibnitz-Keks in the fifteen-minute interval between the two halves.

The summer term was drawing toward a close, and the coming storm of the First World War made itself known in the papers by the heat lightning of the assassination at Sarajevo. The diplomatic ineptitudes that followed did not relieve the tension. Luckily, I had planned to return to America, and I had already secured my third-class passage on a Hamburg-American steamer.

I derived many lasting benefits from Göttingen. My contact with the philosophers was not very satisfactory. I do not have the type of philosophical mind that feels at home in abstractions unless a ready bridge is made from these to the concrete observations or computations of some field of science. From the mathematicians I also got relatively little in the formal courses. Landau's group theory course was a hard-driving plunge through a mass of detail with which I was not fully prepared to cope. I was able to follow Hilbert's course in differential equations only in parts, but these parts left on me a tremendous impression of their scientific power and intelligence. It was much more the meetings of the Mathematische Gesellschaft which taught me that mathematics was not only a subject to be done in the study but one to be discussed and lived with.

Besides this, at Göttingen I learned to meet people both like me and different and to get on with them. This marked an important step ahead in my social development. The net result was that I left Germany much more a citizen of the world than when I first went there. I can say this very truly, even though I had not been fond of all aspects of the Göttingen

environment and although in the war that immediately followed, I passed through a definitely anti-German phase. Yet when I went back to Germany during the confused years between 1919 and Hitler, for all the alienation I may have felt on political issues, there was a large intellectual element in Germany with which I had a sufficient common basis of past experience to feel myself a part.

My year at Cornell and my two years of graduate study in philosophy at Harvard had represented the continuance of my adolescence and my gradual introduction to independent research. They were satisfactory as far as my purely intellectual progress went, but they did not see me clearly out of the Slough of Despond. I was quite as aware as those about me that the way of the infant prodigy is beset with traps and snares, and while I knew perfectly well that my purely intellectual powers were above the average I knew equally well that I was to be judged by standards according to which a moderate degree of success would take on the appearance of failure. Thus I did not escape the floundering that generally goes with adolescence; and although this floundering was at a far higher intellectual level than that of the majority of teenagers, it represented a more than usually severe and doubtful struggle with the forces of uncertainty and of my own inadequacy.

It was the year in Cambridge and in Göttingen, however, that gave me my emancipation. For the first time I was able to compare myself intellectually with those who were not too much above me in age and who represented in fact the cream of the intellectual crop of Europe and even of the world. I was also subject to the inspection of first-rate men like Hardy and Russell and Moore, who could see me without the glamour of my precocity and without the condemnation which belonged to my epoch of confusion. I do not know whether I was outstandingly brilliant in their eyes, but at least they (or some of them) regarded my career as a reasonable bet. I was not under the immediate tutelage of my father and did not have to weigh myself in his somewhat loaded scales. In short, I had been initiated into the great world of international science, and it did not seem utterly hopeless that I should accomplish something there.

I was learning all the time how to comport myself as a social being and what the requirements were for living among those of other traditions and customs. My study in Germany represented an even greater break with my childhood, and an even greater necessity for me to adapt myself to foreign standards or at least not to come into a head-on collision with them.

The Sarajevo pot gradually went from a simmer to a boil. By the time I had got to Hamburg, there were posters on the street, calling on all Austrians

subject to military service to return to their country. The city was full, and the *Christliches Hospiz* at which I stayed could only put me in a bathroom in the waiters' home which was their annex. I heard singing in the street at night and thought the war had come; but it had not, and I spent the time before dawn walking around the outer Alster basin.

I took the train for Cuxhafen, where I embarked on the *Cincinnati* of the Hamburg America Line. A day and a half later I saw the mobilization of the British fleet in Spithead, and about two days afterward we received the news that Germany and England were at war and that the radio station was closed. While we were bound for Boston, we did not know whether we should be able to make it, and at one time there was some talk that we might be sailing for the Azores. However, the sun showed that this was not the case, and we made Boston as intended. This ship was then laid up at a Boston dock until the United States entered the war, when it was taken over as an American transport and later torpedoed by the Germans.

My father met me at the boat, much relieved to find me safe and sound. We took the train together up to New Hampshire. I noticed that Father treated me with more respect than he had ever done: more as a grown man. We talked about the war during the train trip. I was surprised to find how definitely my father's opinion and the university opinion he represented had crystallized against Germany.

The war news was bad. We had hoped for a quick ending of the war, but the German line bit deeper and deeper into Flanders and France, and even when it was held by the taxicab army of Marshal Joffre, it was clear that we were in for a long, desperate, and uncertain war of positions. It was then the children of my generation knew that we had been born too late or—barely possibly—too soon. Santa Claus died in 1914. We surmised that life was to be such a nightmare as Kafka has since described, from which one awakes only to become aware that the nightmare is real, or from which one awakes into an even worse nightmare.

I had written to Bertrand Russell to inquire whether it was advisable to return to Cambridge on the new and augmented traveling fellowship which Harvard had granted me for the academic year 1914–15. He wrote that it would be safe and desirable, and I booked passage from New York on an old ship of the American Line. It dated from the days of auxiliary sail, and had a yacht bow and a bowsprit. It seemed enormously romantic to me.

My two aunts, who had by now risen in the clothing trade world and spent much of their time in Paris, saw me off at New York. The trip was slow but agreeable. There were young people aboard with me who tried to forget the war. We played a version of golf with shuffleboard sticks and disks,

chalking the holes on the deck, and using ventilators, cleats, and deck-houses as hazards. There was an elderly couple from Australia who watched our antics benignly. They ran a sort of agricultural school when they were at home. I was later to see them in the grim London of the war, where their cordiality was a great consolation to me.

Thus I arrived in wartime Cambridge. The air was heavily overlaid with gloom. Part of the Backs had been turned into an improvised hospital for wounded soldiers. In all the vacant spaces of the university, ugly shacks were springing up, of a temporariness more devastatingly permanent than any intended permanency.

In the Union there were lists of casualties, and distressed fathers and brothers were reading them in the hope that they might not contain the names of their own kinsfolk, yet with the expectation that sooner or later these kinsfolk would appear on them. *Blackwood's Magazine* contained monthly installments of Ian Hay Beith's book *The First Hundred Thousand*, which brought to us a sense of the immediacy of the war and of a certain participation in it.

The news continued black and ominous. My friends and colleagues were scarcely able to take their intellectual work with full seriousness, and the blacked-out streets and the white painted curbs added to a general feeling of gloom and doom. Finally, we began to hear suggestions that the Germans were soon to undertake a great unrestricted submarine campaign against merchant and passenger ships.

It was embarrassing for me to meet the soldiers everywhere, in the movies, in the streets, and even in the classrooms of the university, and to think that as a foreigner I was immune to the universal sacrifice. Several times I thought of enlisting, but was deterred by the fact that after all it was not yet my war and that to go into it before my parents were ready to accept the situation would be in some sense a very serious disloyalty to them. Then too, with my poor eyesight, I was not exactly the best soldier material; nor did I desire to sacrifice my life for a cause concerning the merits of which I was not yet fully convinced. Though I definitely preferred the English and French side of the war, I had not yet been excited to that righteous pitch of indignation to which my father had been carried by a complex of emotions which I have already described.

I was impressed with that freemasonry which exists among the British ruling class, whatever their political opinions, which makes it possible to share the intimate knowledge of many secrets carefully concealed from the press and the public. My attention was called to this very forcibly during this second stay in Cambridge. I was in the habit of receiving from my

parents copies of the old Boston *Transcript*, that former fount of ultrarespectability and of reasonably accurate news. In one number I read of the sinking of the British cruiser *Audacious*. I had not seen a word about the matter in my British newspaper. I went to Russell with the news, and he told me that it had been common knowledge since it occurred, and that the *Illustrated London News* had published a photograph of the ship with the caption, "An Audacious Picture!" and no explanation of the audacity.

Furthermore, Russell seemed to be well informed about every other detail of the war which had been concealed from the public at large. Yet, at this time, Russell was an extremely unpopular figure with the officials of the British government. He was a conscientious objector and a pronounced pacifist; and when later America entered the war, he expressed himself concerning the American government in such hostile terms that he was sent to jail and ultimately deprived of his position at Cambridge.

To me this combination of being officially on the black books of the government and still personally in a position to receive from his official opponents information that was refused to the public at large seemed a remarkable tribute both to the stability of England and to the assured position of its ruling class at that time.

By Christmas I could stand the gloom of Cambridge no more and I went down to London. I found rooms in a melancholy turning off Holborn and spent much of my time reading my landlady's books about old London and checking up the places mentioned as they were to be found at the present time. I found my Australian friends in a Bloomsbury hotel. I looked up another Harvard fellow in philosophy, T. S. Eliot, who, I believe, had taken Oxford to himself as I had taken Cambridge to myself. I found him in a Bloomsbury lodging, and we had a not too hilarious Christmas dinner together in one of the larger Lyons restaurants. I also looked up the Whiteheads, and found that war bereavement had already struck them.

Some time after I returned I received a telegram from my parents telling me that the submarine threat was growing worse, and that I should come home on the first possible boat. Actually, Cambridge had almost closed down, and there was very little point in my staying any longer. I decided to finish my year at Columbia, so I booked a passage from Liverpool to New York and ultimately made a gloomy train journey to Liverpool under depressing war conditions. My companions in the compartment were a group of soldiers absent without leave who jumped off the train at the first stop before we arrived at Lime Street and into the arms of the military police.

I have been on winter trips across the Atlantic which have been as calm and as agreeable as any trip in the full summer time, but this March voyage was not one of them. The old ship took it green up to the bridge, and nothing but a youthful resiliency kept me from being sick all the way. Among my fellow passengers the most interesting were a family of Belgian refugees who were leaving a temporary asylum at Cambridge, England, for a more permanent one at Harvard University in the American Cambridge. Professor Dupriez was a distinguished professor of Roman Law at Lovain, and a charming gentleman, but he was also an impractical little scholar of the European type. The practical brains of the family and its energy belonged to his wife, a queenly and downright Flemish lady. There were also four children, two boys and two girls, who were too young to have completely lost the adventurous pleasure of the journey in the depression of defeat and exile. We were to see much of this family in the next few years.

The boat arrived in New York, and I was met by my New York kinsfolk. I went to Boston for a few days to pick up the continuity of our family life, and then I returned to New York to finish my year's fellowship at Columbia University.

I found the skyscraper dormitories of Columbia depressing after Cambridge and Göttingen. I also found the life of the place unsatisfactory in its lack of coherence and unity. Almost the only bond between the professors, who lived widely scattered in University Heights apartment houses or in suburban bungalows, was an almost universal antagonism toward Nicholas Murray Butler and everything that he stood for.

I did not get along too well with the other men in the dormitories. There was no intellectual bond between us, and I seem to have been completely lacking in tact. I insisted on criticizing my seniors intellectually in a way not becoming a boy of the age of a college sophomore. I threw my weight about giving bits of information which were not welcome to the men about me who were predominantly graduate students. It is true that I did not always know that these bits of information were particularly recondite and unwelcome. I intruded upon bridge games between an established set of cronies without making sure that I was welcome. I should have been far more sensitive to the response that my conduct evoked. They used to pester me by setting fire to the newspaper I was reading, and by other such feats of heavy-handed buffoonery.

Following the advice of Bertrand Russell, I studied with John Dewey. I also took courses with some of the other philosophers. In particular, I listened to lectures by one of the New Realists, but I was only able to confirm

my impression of an undigested mass of the verbiage of mathematical logic, completely uncombined with any knowledge of what it was all about.

My term at Columbia was a makeshift at best and although I began to develop the intellectual consequences of my own ideas, I did not get much help from my professors. Indeed, the only one of them who was a great name comparable to those I had learned to appreciate at Cambridge and Göttingen was John Dewey; and I do not think I got the best of John Dewey. He was always word-minded rather than science-minded: that is, his social dicta did not translate easily into the precise scientific terms and mathematical symbolism into which I had been inducted in England and Germany. As a very young man I appreciated the help and discipline of a rigid logic and a mathematical symbolism.

About the time that I returned to America, I was told that the philosophy department at Harvard would look out for me for the next year with an assistant's position, and that I would be allowed to give a free series of Docent Lectures which were the prerogative at that time of every Harvard Ph.D. Hence I began to prepare for my Harvard Docent Lectures.

My research in New York was devoted to an attempt to establish a postulational and constructive treatment of *analysis situs* within the ideational and terminological frame of Russell's and Whitehead's *Principia Mathematica*. This was in 1915, many years before Alexander, Lefschetz, Veblen, and others had succeeded in doing very much the same sort of thing that I then tried to do. I had pages and pages covered with formulae, and I made a certain very real progress, but I was disappointed because I considered the bulk of results which I obtained distressingly small in view of the large structure of presuppositions which I had set up to obtain them; consequently I never carried my investigations sufficiently far to put them into publishable form. In neglecting to do so I may very well have lost the chance to be one of the founders of what has become a most fashionable mathematical subject. However, my early start in mathematical logic, a subject at which many mathematicians arrived only after a mature consideration of other fields, rather cloyed me with abstraction for abstraction's sake, and gave me a somewhat exacting sense of the need for a proper balance between mathematical apparatus and the results obtained before I have been able to consider a mathematical theory as intellectually satisfying. This has led me more than once to discard a preoccupation with a theory which I myself had at least partly originated, and which, because of the ease with which it has furnished doctoral theses, has become a fashionable field of studies. Here I refer in particular to the study of Banach's spaces, which I discovered

independently of Banach in the summer of 1920, only a few months after his own original work and before its publication.

In this connection, let me say that the fact that I came from a field of the most abstract theory has always led me to put a great value on richness of intellectual structure and on the applicability of mathematical ideas to scientific and engineering problems. I have always had, and I still have, great suspicions and reservations in regard to work that is thin and facile; and until we had the correcting influence of the sense for application required by war work, I cannot deny that a large part of specifically American work and not a little of that found abroad have suffered from a certain thinness of texture.

I used to explore on foot the whole of Manhattan Island, even as far as the Battery. I went for walks on the Palisades near the Jersey side of the river with Professor Kasner of the mathematics department. He then lived in a part of Harlem at the foot of University Heights, before Harlem had come to have its present significance. Kasner would tell me much of his ideas on differential geometry, and he was a pleasant walking companion, who knew a much wilder Palisades region than can be found at the present time.

My stay in New York also marked my introduction to the American Mathematical Society, and my first visual acquaintance with most of the elder scholars of the group. At that time the hotel headquarters was that pile of Gay Nineties respectability, the old Murray Hill Hotel. The society was then more of a New York institution than it is at the present time, for it had indeed been founded by a New York group, and had been known for some years as the New York Mathematical Society. There attached to it a little of a beer-hall flavor, which has evaporated with time and the increased prosperity and respectability of the scientist.

I spent Sunday and sometimes Saturday with my grandmother and other New York relatives somewhere up in the Spuyten Duyvil region of Manhattan. My relatives were very kind to me but I found the *gefüllte-fish* atmosphere of a north Manhattan apartment house a little stifling. On one occasion I ventured to accept the invitation of my cousin Olga to take a walk in the country with her and to visit a few friends. I should have given my grandmother this time, as she was old and diabetic and not likely to live longer than about a year. However, the indignation with which my mother received the news of my dereliction from duty was only in part due to her affection for my grandmother. It was at least in part due to her fear of my acceptance of Jewish environment in the more threatening form provided by Olga and the younger generation.

My mother's father died while I was at Columbia, and I saw my mother on the hurried trip through New York to Baltimore. Not long after that I received a telegram from my father summoning me home for an immediate conference. Short of money as I was always at that time, I rushed to the train and sat the night out in a coach. When I came home the awful news was broken to me. One of my former fellow students, who was an instructor at Harvard, had told the authorities of the philosophy department, who were considering my future career, that just before obtaining the doctor's degree I had bribed the janitor to show me the results of some of the examinations. I have already mentioned this incident and although my conduct was certainly not justifiable, bribery played no part in it. My father took me immediately to Professor Perry's office to confront me with my accuser, and I had the pleasure for once in my life to hear my father's magnificent repertory of invective applied, not to me, but to an enemy. The incident ended in my formal acquittal, but it did no good to me in my later search for a permanent job.

My stay at Columbia had not represented any part of my original plans for that year, and had been forced on me by the exigencies of the war and of my parental fears. It probably represents the low point of my academic career between the summit of my European trips and the gradual ascent by which I climbed to a position as a teacher and an independent research man. Here, if it appears thin, it is because it was in fact thin. Still, it taught me something about New York and something about academic life at a large city university. I had done a piece of my own scientific work which would have been important if I had at that time possessed the courage to see its originality and to bet upon it in the face of a general lack of interest in the new Analysis Situs.

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