

Given, however, our gross ignorance of the truth or falsity of many assertions in philosophy, there are, of course, many disagreements over the probabilities to be assigned to them. In order to improve one's capacity to judge, it is necessary to reflect on the interconnection of the parts of some attractive system of beliefs and check them against one's own considered convictions on all the relevant levels of generality and certainty. This cautious approach tends to lead to an initial restriction to areas that promise continued stable agreement and to assertions of vague or qualified generalities which are reasonable but hardly striking.

In this sense, logic as metaphilosophy is a retrospective and preparatory approach to philosophy which tries to see alternative philosophies as complementary and to compare a philosophy (or some part of it) continually with our intuitions or judgments in reflective equilibrium. In the background are our large practical concerns, which give direction and ultimate motivation to our philosophical speculations.

Truth and *objective reality* are idealizations which derive meaning and are acceptable to us by way of our anticipation of intersubjective agreement, either universally or within a significant type of society, ideally if not actually. Philosophy is impoverished by an inappropriate resistance to abstraction and idealization, which, however, have to be restrained by attention to the requirement of foreseeable potential agreement. For instance, the conflict between constructivism and Platonism can be decomposed by breaking the relevant contested beliefs into parts that have fairly direct contact with our intuitions or considered judgments; we can thus localize the disagreement and choose among different forms of constructivism and Platonism within each domain, whether mathematics or moral theory or political theory.

I discuss these ideas more fully in the Epilogue. Even so, I am under no illusion that I am doing more than groping for an illustration of a program which I find attractive.

The first two chapters of this book are devoted to the life and mental development of Gödel. The third chapter illustrates the quest for final solutions and grand unifications of knowledge and action by discussing Gödel's written speculations on God and an afterlife. Chapter 4 supplies the background and a chronological summary of my conversations with Gödel in the 1970s, together with a report of his isolated general and technical observations.

Chapter 5 considers Gödel's comments on philosophies and philosophers, including his schema for classifying alternative worldviews, his support of Husserl's phenomenology, his criticism of positivism and empiricism, and his digressions on Kant and Wittgenstein. Chapter 6 concerns his attempt to demonstrate the superiority of minds over brains

and computers, with special emphasis on the contrast between minds and computers.

The three chapters from 7 to 9 are intimately connected through Gödel's governing ideal of philosophy as an exact theory. He seems to see mathematics and Newtonian physics as models for philosophy and metaphysics. The strategy appears to be this: reflections on the nature of mathematics and logic support Platonism in mathematics; reasoning by analogy, he conjectures that Platonism in metaphysics is true as well; so it is possible to develop metaphysics as an exact theory.

His argument for Platonism in mathematics is the subject matter of Chapter 7. Chapter 8 is devoted to set theory and to logic as concept theory, which Gödel viewed as a sort of bridge between mathematics and metaphysics. In Chapter 9 I present an organized report and interpretation of our conversations, supplemented with my own comments and relevant material drawn from Gödel's writings. I try to combine Gödel's fragmentary metaphysical speculations and brief statements on his conception of philosophy. These programmatic observations provide a framework within which to place the more substantive assertions in Chapters 5 to 8, making it possible to discern the motivating force behind them. These substantive views are, of course, also of interest to those who do not share his optimistic belief in the feasibility and fruitfulness of his ambitious program for metaphysics.

Finally, in the last chapter, the Epilogue, I sketch my own approach to philosophy, in contrast to what I take to be Gödel's outlook.

Chapter 1

Gödel's Life

To develop the skill of correct thinking is in the first place to learn what you have to disregard. In order to go on, you have to know what to leave out: this is the essence of effective thinking.

Gödel, 15 March 1972

Roughly speaking, Gödel spent the first half of his life in Central Europe and the second half in America. He was born at Brünn in Moravia in 1906 and lived there until the autumn of 1924, when he left for the University of Vienna. Subsequently he lived and worked primarily in Vienna, paying three extended visits to America between 1933 and 1939. He left Austria in January 1940 and from March 1940 until his death in January 1978 made his home in Princeton, New Jersey. There he was a distinguished member of the Institute for Advanced Study. The time between 1929 and January 1940 was the most eventful and dramatic period of his life and work.

He was a student from 1912 to 1929 and engaged in academic research from 1929 to 1976. His most famous work, all in mathematical logic, was done in Vienna between 1929 and 1938. Yet, by his own account, his primary interest was philosophy, and he spent more effort in doing philosophy as he understood it than on anything else. From 1943 on, he said, he was chiefly occupied with philosophy. A central feature of his life and work, accordingly, was his choice to concentrate on what he considered to be fundamental, disregarding other issues.

At about the age of four, Gödel acquired the nickname *der Herr Warum* (Mr. Why) because he persistently asked the reasons for everything. He came from a quite wealthy family and grew up in a villa with a beautiful garden. He did exceptionally well and was much praised in school and, especially, in college. By the time he was twenty-five years old he had already done spectacular work, and he received wide recognition very soon afterward.

When he was about eight years old Gödel had a severe bout of rheumatic fever. Thereafter he was somewhat hypochondriacal; and his

constant preoccupation with his health was accentuated by his excessive distrust of doctors. In 1976 he said that his generally poor health had, at certain periods, prevented him from doing serious work. He was about five feet six inches tall, usually underweight, and, in his later years, exceptionally sensitive to cold and prone to eating problems.

Gödel is remembered as a cheerful but timid child who became acutely troubled whenever his mother left the house. Throughout his life he avoided controversy and confined his personal contacts to a small circle of people. He liked women and even as a school boy developed romantic interests. Around 1928 he met his future wife, Adele, and from then on, despite the disapproval of his family, they remained together.

In Gödel's lifetime little was generally known of his personal life, although in 1976 he gave me an account of his intellectual development. After his death, his papers, his letters to his mother, and the reports of others—such as his brother Rudolf, Karl Menger, and Georg Kreisel—revealed more details about his life. In *Reflections on Kurt Gödel* (Wang 1987a, hereafter referred to as *RG*) I reported on the available facts about him, bringing together, in loosely organized manner, material from these sources.

In the rest of this Chapter I present a more coherent sketch of Gödel's life, digesting and structuring a selection from the data now accessible. These data include, apart from the material used in *RG*, a history of the family by his brother Rudolph Gödel (1987) and interviews with other people who knew him, conducted in May of 1986 by Eckehart Köhler, Werner Schimanovich, and Peter Weibel; I also make extensive use of Gödel's letters to his mother. I consider the details of his mental development separately in Chapter 2, even though I realize that, in a case like his, life and work are intimately intertwined.

Work and personal relationships are the two central concerns for most people. For Gödel, health occupied a comparable place as a third conspicuously determinative factor. From his birth in 1906 until 1928 he enjoyed a happy and harmonious period of preparation. During the most turbulent stretch of his life, from 1929 to the beginning of 1940, he did outstanding work and achieved great fame; he also experienced several mental crises, suffered deep personal conflicts, and reluctantly made the disruptive transition from Central Europe to America. From March 1940 until his death in January 1978 he lived an externally uneventful life in Princeton, except that during his last few years his health problems and those of his wife became his dominant concern.

1.1 A Sketch

Kurt (Friedrich) Gödel was born on 28 April 1906 at Brünn (in Moravia), which was known then as the Manchester of the Austro-Hungarian

Empire. The city was renamed Brno when it became a part of Czechoslovakia after the First World War. His German-speaking family cultivated its German national heritage. According to Kreisel (1980:152), Gödel wrote an essay at the age of fourteen extolling the superiority of the austere lives of Teutonic warriors over the decadent habits of civilized Romans. Whatever such youthful opinions may have meant for Gödel at the time, he was, as an adult, known to be peace-loving and cosmopolitan in his general outlook.

Gödel's paternal grandfather was born in 1848 and died before the turn of the century, apparently by suicide. His father, Rudolf, who was born in Brünn on 28 February 1874, did not grow up with his parents but lived with his Aunt Anna, a sister of his father. He did poorly in grammar school and was sent to a weaver's school at about the age of twelve. He completed his study with distinction and immediately obtained a position at the then famous textile factory of Friedrich Redlich. He worked in this firm till his premature death in 1929, rising first to manager and later to part-owner.

Gödel's mother, Marianne Handschuh (1897–1966), grew up in a large and happy family at a time when Europe was at peace. She had a broad literary education and for some time attended a French school in Brünn. A lively and cheerful young woman with many friends, she loved music, theater, poetry, sports, and reading. Her family occupied an apartment in the same house as the Gödels.

Marianne and Rudolf Gödel were married on 22 April 1901 and moved to their own apartment soon thereafter. Their first son, also christened Rudolf (and called Rudi in the family) was born in February 1902. Marianne was brought up as a Lutheran, and her husband was only formally Old Catholic. Their sons received no religious training. Gödel's brother remained indifferent to religion. Gödel himself, however, had a lifelong dislike of the Catholic Church and developed quite early theological interests. In 1975 he gave his religion as "Baptized Lutheran" (but not a member of any religious congregation). He wrote, "My belief is *theistic*, not pantheistic, following Leibniz rather than Spinoza." In 1978 Adele said that Gödel read the Bible in bed on Sundays although he did not go to church.

According to Gödel's brother, the union of their parents, though not a "marriage of love," was satisfactory. Marianne was undoubtedly impressed by the energetic efficiency of her husband and appreciated the material comfort he provided for the family. And he, who was duller and more solemn, enjoyed her cheerful friendliness. Both sons were in closer personal contact with their mother than with their father. Marianne always regretted, however, that neither of her children shared her interest in music.

Later in life Marianne recalled many details from Gödel's childhood which, in her opinion, presaged his later development into a world-famous intellect. Gödel's maternal grandmother, who often played with him before her death in 1911, had prophesied a great future for him.

In 1913 when Gödel was seven and his brother eleven, the family moved into a new villa with a fine garden. The boys had lots of fun with their two dogs, a Doberman and a small ratter. They played mostly with each other and had few friends; they played with building blocks, train sets, a sandbox, eight hundred tin soldiers, and board games.

From September 1912 to July 1916 Gödel attended the *Evangelische Volksschule*, a Lutheran school in Brünn. He then began his eight years in the *Staatsrealgymnasium mit deutscher Unterrichtssprache*, a grammar school using the German language. He received private tutorials in English and did not take the elective course in Czech. He chose instead to study (from 1919 to 1921) Gabelsberger shorthand, of which he later made extensive use. (This is the reason why so much of his unpublished writing remains inaccessible today.)

Throughout his twelve school years Gödel received top marks in every class except for gymnastics and, once, mathematics. He was most outstanding, at first, in languages, then in history, and then in mathematics. To the astonishment of his teachers and classmates, he had already mastered the university material in mathematics when he was about seventeen. He was less attached to the family and less interested in their garden than his brother was.

Gödel entered the University of Vienna in autumn 1924 to study theoretical physics. His interest in precision led him from physics to mathematics in 1926 and to mathematical logic in 1928. He concluded his student days in the summer of 1929 by writing his important doctoral dissertation which proved the completeness of predicate logic. As students he and his brother lived together, each occupying his own room. Both prepared themselves for careers in Austria, rather than Czechoslovakia.

Gödel's student days were largely trouble-free and enjoyable. Gifted, diligent, well prepared in all relevant subjects, and the son of a well-to-do family, he possessed all the preconditions to benefit from the excellent intellectual nourishment the University of Vienna offered at the time. He was liked, and his talent was generally appreciated. He undoubtedly learned and digested a great deal in these years, principally in mathematics, physics, and philosophy. According to the recollection of Olga Taussky, a fellow student, "He was well trained in all branches of mathematics and you could talk to him about other things too—his clear mind made this a rare pleasure" (quoted in *RG*:76).

He was comfortable with his brother, and Brno was not far away, enabling them to enjoy family vacations and visits to and from their parents.

Even though they did not spend much time together because of their different schedules, the brothers got along with each other well enough.

On 23 February 1929 Gödel's father died unexpectedly. His mother moved to Vienna in November 1929 to live with her sons in a large apartment. For a number of years, the three of them often went to the theater together and had long discussions about what they had seen. In November of 1937 Gödel's mother moved back to Brno, and Gödel and his brother each acquired his own domicile in Vienna. Gödel married Adele Porkert in September 1938. His brother never married and lived with their mother in Vienna from 1944 until her death in 1966.

After Gödel's death, his brother revealed that:

1.1.1 The family was unhappy with his choice. Of course, she was not a match for him intellectually, but this would lie in the nature of things. She came from a very simple background. Her parents also lived in Langegasse. Her father was a photographer. (R. Gödel 1987.)

As I said before, the period from 1929 to the beginning of 1940 was the most turbulent in Gödel's life. He did his most famous work and received wide recognition. He traveled to the United States four times, and the last time he came to stay. He suffered several mental crises. He lived with Adele but had to contrive elaborate arrangements to deal with the disapproval of his family.

From the spring of 1929 to the autumn of 1930 Gödel made truly fundamental contributions to logic and was quickly recognized all over the world. He became a Privatdozent in March 1933. He received something like a standing invitation from the Princeton Institute for Advanced Study, and visited there from October 1933 to May 1934, from October to November 1935, and from October 1938 to January 1939. He also taught at the University of Notre Dame from January to May 1939.

Even after World War II began in September 1939, he apparently still wanted to remain in Vienna. In November 1939 he and Adele bought an apartment there and spent a good deal of money improving it. After the Anschluss, however, he had difficulty regaining even his modest position as Dozent under the new Nazi requirements. And, to his surprise, he was found fit for military service. He even considered obtaining a position in industrial research in the autumn of 1939. At the last minute he appealed to Oswald Veblen in Princeton and had to go through the unpleasant process of getting visas and permits to enable him and Adele to leave Vienna for America on 18 January 1940.

According to Gödel's brother Rudolf, their father had left each of them some money, and Gödel spent his share with Adele over the next seven or eight years. Rudolf believed that when they were still living with their mother, Gödel had secretly rented his own apartment and had probably

used it with Adele. From November 1937 until November 1939, after their mother returned to Brno, Gödel lived—undoubtedly with Adele—at Himmelstrasse 43 in Grinzing, the famous Viennese wine district.

For many years Gödel kept his association with Adele almost entirely separate from his family and professional life. Their official marriage took place on 20 September 1938 at a registry office with only few people—including Adele's parents and Gödel's mother and brother—present. Apparently Gödel had never introduced Adele to his family before this occasion. Two weeks after the wedding, Gödel again left for America, alone, and stayed away almost nine months.

The months before his arrival in Princeton with Adele in March 1940 were hectic and disturbing for Gödel. Without a position in Austria and threatened with military service, he nevertheless bought an apartment and moved into it. Then, after the grueling process of obtaining visas and exit permits in the midst of the hurried exodus of Austrian Jews and intellectuals, he and Adele faced the long journey through Siberia and Japan to get to Princeton.

The strain of these experiences on a personality liable to periodic bouts of depression could have been—but apparently was not—excessive. According to his brother, around the end of 1931, not long after the publication of his most famous work, Gödel suffered from what “one would now call an endogenous depression—at that time neither the term nor the diagnosis was in existence yet.” (R. Gödel 1987:00). This was Gödel's first serious nervous crisis and included suicidal tendencies. On this occasion he was sent to the Purkersdorf Sanatorium and, at another time, to Rekawinkel.

Gödel had a similar disturbance after his return from his first trip to America in June 1934. In the autumn of 1935 he cut short the visit, pleading depression and overwork. When he reached Paris he talked to his brother by telephone for about an hour. Rudolf then went to Paris and brought him back to Vienna by train. Gödel had another breakdown after the assassination of his teacher and friend Moritz Schlick on 22 June 1936. Decades later Adele told several people that Gödel was once sent to a sanatorium against his will and that she had rescued him by catching him as he jumped out of a window. This event presumably occurred in 1936. Gödel's papers contain a 1936 receipt for Dr. and Frau Gödel from a hotel at Aflanz for a two-week stay, which may have been made in the aftermath of the rescue.

In September 1931 Rudolf Carnap reported in his diary that Gödel had read Lenin and Trotsky, was in favor of socialism and a planned society, and was interested in the mechanism of such social influences as those of finance capital on politics. In 1939, on the other hand, Karl Menger complained of Gödel's indifference to politics when he was at Notre Dame.

Around 1935 Gödel was often seen reading at the department library, deeply sunk in thought and studying the same page over and over again. When he lectured at the university, he always faced the blackboard, and the audience dwindled rapidly as the course continued. A plaque in his honor now hangs in the room where he taught.

During the eventful years from 1929 to early 1940, Gödel produced the major part of the work he published in his lifetime, from the most famous papers to brief notes and reviews. He also did all the extended teaching in his life (three courses in Vienna, two in Notre Dame, and two famous series of lectures in Princeton), gave over a dozen single lectures at colloquia and professional meetings, and made his seven intercontinental trips.

In March 1940 a tranquil new chapter of his life began. In Princeton Gödel was appointed to the Institute for Advanced Study annually from 1940 to 1946. He became a permanent member in 1946 at the age of forty and a professor in 1953 at the age of forty-seven. At first he and Adele lived in rented apartments. In April 1948 they became citizens of the United States, and in August 1949 they bought the house on Linden Lane where they spent the rest of their lives. Adele took seven extended trips to Europe between 1947 and 1966, but Gödel confined his travels to summer vacations at places close to Princeton. He retired from the institute in 1976 at the age of seventy.

Even though Gödel wrote a good deal during his decades at Princeton, he published little in those years—mostly in response to requests. Of the seven articles published in this period, three were written to honor Bertrand Russell (1944), Albert Einstein (1949), and Paul Bernays (1958); two for invited lectures, to the Princeton University Bicentennial Celebration (1946, first published 1965) and the International Congress of Mathematicians (1950); and one in response to an invitation to write an expository article on Cantor's continuum problem (1947). The only unsolicited paper was the one giving his new solutions to Einstein's field equations, which was published in the *Reviews of Modern Physics* in 1949. In the 1960s he made brief additions to five of his earlier works, meticulously prepared for new editions.

Between 1940 and 1951 Gödel gave a number of lectures, but none, as far as I know, after 1951. In 1940 he delivered four lectures on constructible sets at Princeton in April and one on his consistency proof of Cantor's continuum hypothesis at Brown University on 15 November. In 1941 he gave some lectures on intuitionism in Princeton and one at Yale University on 15 April, entitled "In What Sense Is Intuitionistic Logic Constructive?" There were also the two (later published) lectures of 1946 and 1950 mentioned in the preceding paragraph. Finally, he lectured in Princeton on rotating universes in May of 1949 and gave his Gibbs

lecture—"Some Basic Theorems on the Foundations of Mathematics and Their Philosophical Implications"—to the American Mathematical Society in Providence in December of 1951.

By his own account, Gödel worked principally on logic during his first three years in Princeton and then turned his attention to philosophy. From 1943 to about 1958, as I report at length in Chapter 2, Gödel concentrated on philosophy as it relates to mathematics and, to a lesser extent, to physics. From 1959 on he turned his attention to general philosophy, to tidying up certain loose ends in his earlier work, and to an unsuccessful attempt to solve Cantor's continuum problem.

From autumn 1944 on Gödel tried periodically to get in touch with his mother and his brother in Vienna. In a letter dated 7 September 1945, he wrote that he had received their letters of July and August. More than two hundred of his letters to his mother Marianne, from then until her death on 23 July 1966, have been preserved; these letters are a valuable source of information about his daily life and his views on various matters over this extended period.

On the whole, the letters deal with the ordinary concerns of a middle-class couple without children. In the early years, there is a good deal about packages and money orders sent to their families in Vienna. Every year there were exchanges of gifts, and messages were sent for Christmas, Mother's Day, Gödel's birthday, and Marianne's birthday. There were reports and comments on health and diet, on summer vacations, on friends and relatives, on Marianne's travels, on their apartments and their house, on maids and gardeners, on pets (dogs and parrots), on films and operas, on books, on radio and television, and so on.

In addition, the letters record a number of important events in Gödel's life and work between 1946 to 1966. They include his study of Einstein's relativity theory and its relation to Kant's philosophy (from 1947 to 1950) and his two lectures and three published papers on this work. They also mention his Gibbs lecture in 1951 and the invitation, in May 1953, to write a paper on the philosophy of Rudolf Carnap. Over the next few years he mentions this work in his letters several times, but he did not publish the paper in his lifetime. In 1956 he was invited to write a paper to honor Paul Bernays; he published it in 1958.

In a letter in April of 1976, Gödel speaks of the growth of his own reputation since the 1930s: an enormous development over the first ten or fifteen years, but afterwards kept up only in part. He also mentions a number of events that exemplified the recognition of his work: the invited lectures of 1950 and 1951, the honorary degrees from Yale in 1951 and from Harvard in 1952, the Einstein Prize and the promotion to professor in 1953, and an article on his work in *Scientific American* in June 1956.

On 14.12.58, in reply to his mother's concern about his health, he wrote: "Yet I was only really sick twice in the nineteen years since I have been here. That means then once in ten years. But that is really not much." The two instances he refers to, apparently, were a bleeding ulcer in February 1951 and a psychic disturbance in 1954, which was accompanied by the feeling that he was about to die. The letters also indicate that he was not well during the early part of 1961.

For almost ten years, Gödel periodically planned visits to his mother in Vienna but each time changed his mind. Finally in 1957 he invited his mother to visit him instead. His mother and his brother visited Princeton in the spring of 1958, the spring of 1960, the autumn of 1962, and the spring of 1964. In 1966 his mother wanted to come for his sixtieth birthday but was too ill to make the trip.

In the letters to his mother and, occasionally and briefly, to his brother, Gödel writes a good deal about Adele, about Einstein, about politics, and about his own health and daily life. Every now and then he makes some general observations on his life and outlook, which seem better dealt with in a separate section later in this chapter. He said little about these matters in his conversations with me, except to offer some remarks about his health, which I also include in the section on this subject.

Gödel's marriage and his relationship with Einstein are especially well documented and interesting aspects of the human relations in his life. We know considerably less about his relations with other people. According to Rudolf, neither of the brothers had any close friends at home. In his Vienna days, Gödel was friendly with some of his contemporaries, including Marcel Natkin, Herbert Feigl, John von Neumann, Alfred Tarski, G. Nöbeling, and Abraham Wald. Among his teachers, he seems to have interacted fairly extensively with Hans Hahn, Moritz Schlick, Rudolf Carnap, and Karl Menger. His other teachers included Hans Thirring, Heinrich Gomperz, and Philipp Furtwängler. At Princeton he is known to have been friendly with Oskar Morgenstern, Hermann Broch and Eric Kahler, and to have had some measure of contact with Oswald Veblen, John von Neumann, Emil Artin, Alonzo Church, Paul Oppenheim, Paul Erdos, Marston Morse, Deane Montgomery, and Hassler Whitney. He found all the directors of the Institute well disposed toward him. He was, at various times, comfortable with a number of logicians who saw him as their master, among them William Boone, Paul J. Cohen, Stephen Kleene, Georg Kreisel, Abraham Robinson, Dana Scott, Clifford Spector, Gaisi Takeuti, Stanley Tennenbaum, and me. He corresponded with Paul Bernays over many years and invited him to the Institute several times.

I know of no source of information about Gödel's life after July 1966 comparable in detail to his letters to his mother for the earlier period. We

know that he resumed work on Cantor's continuum problem more than two decades after his original study (1943) and spent time expanding his 1958 paper on an interpretation of intuitionistic logic. In 1967 and 1968 he wrote me two careful letters to explain the relation between his philosophical views and his mathematical work in logic.

In early 1970 Gödel was suffering from poor health and thought he was about to die. After his recovery he had extensive discussions with me between the autumn of 1971 and the spring of 1976.

In 1974 Gödel was hospitalized for a urinary tract problem but declined to have an operation, and from then on he had to wear a catheter. For the last few years of his life his health problems and those of Adele became his central concern, especially after the spring of 1976.

Gödel arranged to have me visit the Institute for 1975 and 1976, but he mostly stayed at home and talked with me by telephone. We had many extended conversations between October of 1975 and March of 1976. After he was briefly hospitalized around the end of March theoretical discussions virtually ceased. In June of 1976, however, he spoke to me at some length about his intellectual development.

Near the end of May 1977, urged by William Boone, I tried to persuade Gödel to go to the Graduate Hospital at the University of Pennsylvania, where some excellent doctors were prepared to deal with his health problems as a special patient. He asked for and took down all the relevant information, but, in the end, would not give his permission to be taken there.

In July of 1977 Adele had an operation and subsequently stayed away from home for about five months. I myself was out of the country from mid-September to mid-November of that year. When I returned, I found Gödel very depressed and full of self-doubt. Once he complained that there was no one to help him at home. I asked Hassler Whitney, who had taken it upon himself to look after Gödel's needs, about this; Whitney told me he had sent several nurses to the house, but Gödel had refused to let them in.

On 17 December 1977 I visited Gödel and brought, at his request, a roasted chicken and some biscuits. He asked me to break up the chicken into pieces, but did not eat any while I was there. On this occasion, he said to me: "I have lost the power to make positive decisions. I can only make negative decisions." A few days later Adele returned home, and on 29 December Whitney arranged to have Gödel taken to the Princeton Hospital. He died there on Saturday 14 January 1978. According to the death certificate, he died of "malnutrition and inanition, caused by personality disturbance." A small private funeral service was held on 19 January and a memorial meeting took place at the Institute on 3 March.

1.2 Health and Daily Life

In a letter of 29 April 1985, Gödel's brother wrote to me:

1.2.1 My brother was a cheerful child. He had, it is true, a light anxiety neurosis at about the age of five, which later completely disappeared.

1.2.2 At about the age of eight my brother had a severe joint-rheumatism with high fever and thereafter was somewhat hypochondriacal and fancied himself to have a heart problem, a claim that was, however, never established medically.

In his later years, Gödel's preoccupation with his health was well known. It is likely that this preoccupation began quite early, perhaps not long after his rheumatic fever. It appears, however, that he enjoyed good health on the whole for the first twenty-five years of his life. As far as I know, no one, including himself and his brother, has mentioned any other illness during this period, and we have no direct information about the state of his health before 1931. We do know, however, that he performed extraordinarily well in school, in college, and in his early research without any apparent interruptions for health or for other reasons. Indeed his powers of concentrated and sustained work were clearly evident from these early achievements. According to Kreisel, these powers "continued into the sixties when his wife still spoke of him, affectionately, as a *strammer Bursche* [vigorous youth]" (Kreisel 1980: 153).

There are several stories of Gödel's early romantic interests. When his mother was visiting Lugano in 1957, he wrote her (9.8.57), "I still remember the Zillertal and also that I experienced my first love there. I believe her name was Marie." There is no indication of when this took place, and it probably came to nothing. While he was still in school, his brother recalled, he fell in love and conversed easily with the daughter of some family friends who visited frequently. The young woman was more than ten years older than he was, and his family objected strongly, and successfully.

Rudolf once told me that, in his student days in Vienna while the brothers were living together, they often ate at a nearby restaurant on the Schlesingerplatz because Gödel was interested in a waitress there. It was a family business: the father was the cashier, the mother cooked, and their attractive young daughter waited on the customers.

At about this time, according to Olga Tausky-Todd, a fellow student at the university, Gödel was seen with a good-looking young girl who "wore a beautiful, quite unusual summer dress." This girl "complained about Kurt being so spoiled, having to sleep long in the morning and similar items. Apparently she was interested in him, and wanted him to give up his *prima donna* habits" (Tausky, "Remembrances of Kurt

Gödel", in P. Weingartner and L. Schmetterer, eds., *Gödel Remembered*, 1987, Bibliopolis, Napoli; hereafter Taussky 1987; see p. 32).

During university vacations, Gödel often accompanied his family to resort areas. Even though he apparently never drove later in life, in those days he sometimes drove the family car, a Chrysler, and was, according to his brother, a fast driver.

I have mentioned earlier the turbulent decade of Gödel's life between 1929 (when he was twenty-four) and 1939 (when he was thirty-four). During these years he made most of his famous discoveries, began his lifelong intimacy with Adele, did all his intercontinental travels, and, according to Adele and his brother, was mentally ill several times. In his conversations with me, however, he said nothing about his various mental crises, although he did mention a severe tooth problem in 1934 and a period of poor health in 1936. From 1940 to 1943, he told me, his health was good, and it was exceptionally poor in 1961 and in 1970.

His letters to his mother after he moved to Princeton and was able to reestablish contact with her near the end of the war, provide more information about his health and his daily life. My quotations from these letters are prefixed by their dates.

6.4.46 I am glad that you have in Vienna at least good plays for a diversion. We never go to the theater here but often to the cinema, which is a good substitute for it, since there are really many good pieces. What is also incomparably better here is the music on the radio (i.e., light music, I cannot judge the others).

Probably in 1942, Oswald Veblen or Paul Oppenheim introduced Gödel to Einstein, and they became close friends for the dozen years or so before Einstein's death in April of 1955. Almost every day they walked together to and from the Institute. At this time Einstein and Gödel each had a large office on the ground floor of Fuld Hall. According to Deane Montgomery, whose office was (from 1948) next to Einstein's, Gödel ordinarily stopped at Einstein's house about ten or eleven in the morning, and they walked together to Fuld Hall. They worked until one or two in the afternoon, and then walked home together. They usually approached Fuld Hall from the side near Olden Lane and used the side entrance. Gödel's mother must have heard about her son's friendship with Einstein and asked him about it. In his letter of 27.7.46, Gödel mentioned Einstein for the first time; from then on, Einstein was a frequent topic of their correspondence.

19.9.46 Mostly I am so deeply absorbed in my work, that I find it hard to concentrate so much on something else, as is necessary for writing a letter.

19.1.47 We always spend Sundays in very much the same way. We get up toward noon and after eating I do the weekly account and read the newspaper.

Generally I only subscribe to the newspaper (the *New York Times*) for Sunday and find this alone still too much. [Gödel usually wrote his letters to his mother on Sundays too, mostly in the evening.]

19.1.47 I have also enough exercise, since I walk daily to and from the Institute, that is easily half an hour each way. Moreover, in the afternoon I often go to the university or the town center, which takes again at least half an hour to get there and come back.

On 2 May 1947 Adele sailed for Europe and stayed away for about seven months.

12.5.47 Naturally I am now very lonely, especially the Sundays are even more lonesome than the other days. But I have anyhow always so much to do with my work, not much time is left for me to brood over it. Making the bed is a healthy gymnastic exercise and anyhow I have otherwise nothing to do.

One day in December of 1947 Oskar Morgenstern drove Gödel and Einstein to Trenton for Gödel's citizenship examination. Einstein called it "the next to last examination," evidently having in mind death as the last one. On 2 April 1948 Gödel and Adele took their citizenship oath together.

17.2.48 Although my hair is already turning grey and greyer, my youthful elasticity has not diminished at all. When I fall, I spring back on my feet again like a rubber ball. That is probably a remnant of my gymnastic suppleness.

In 1949 the Gödels bought their house on Linden Lane. They moved in at the beginning of September and lived there for the rest of their lives.

In February of 1951, Gödel was hospitalized for delayed treatment of a bleeding duodenal ulcer requiring massive blood transfusions. The undue delay was apparently caused by his distrust of doctors. In February 1978, shortly after Gödel's death, his brother wrote that "My brother had a very individual and fixed opinion about everything. Unfortunately he believed all his life that he was always right not only in mathematics but also in medicine, so he was a very difficult patient for his doctors" (1987:26).

Dr. Joseph M. Rampona was for many years Gödel's physician in Princeton, probably from 1935 to 1969. In an interview in May 1986 (see Schimanovich et al. 1995?), he said that Gödel had refused to go to the hospital to be treated for the ulcer and that they had to ask Einstein to persuade him. The relationship between Gödel and Einstein was, according to Rampona, "very very close. I felt that Einstein in his presence was like a blanket for him. He felt confident then. He could really speak to the world at that moment. Einstein was for him a kind of protection." The very morning when Dr. Rampona put Gödel in the hospital, J. Robert Oppenheimer, director of the institute, telephoned him and said, "Believe

it or not, doctor, but there is the greatest logician since the days of Aristotle!”

In autumn 1935, while he was still living in Vienna, Gödel cut short a visit to Princeton because of depression and overwork. Before leaving he apparently went to see Rampona about his depression and continued to consult him when he moved permanently to Princeton. Dr. Rampona recounted that he saw Gödel about once a week until, probably, not long before February 1970. “Someone told him to take digitalis,” Rampona recalled. “He had no reason for taking it, no shortness of breath, no swelling of the ankles. So I refused to give it. And I kept on refusing and refusing. Finally he went to another doctor! That was the first time he went to another doctor.”

His friends knew that in his later years Gödel ate very little as a rule. As early as a letter of 19 January 1947, he argued that it is better to eat less than to eat more. Later the traumatic experience of the bleeding ulcer led him to adopt a stringent diet, one apparently designed largely by himself. His brother believes that not eating enough was the central problem of his health, at least after around 1950. Dr. Rampona, commenting generally on Gödel’s health seems to concur:

1.2.3 He had no diseases, he was just a weakly built man. I do not think he ever took exercises in his life and he never built himself up as a young man. He grew up, probably with good health, and grew to the age he did.

1.2.4 When you do not eat anything and your nutrition is bad, things in your mind do not work the way they do when you are normal. He was never really sick, just did not eat. He lived on the tissues of his own body. [That was also one reason why] he had the feeling that someone was going to poison him. He was very fearful of strangers giving him something to eat.

I have found no exact information about the date of Gödel’s 1951 hospital stay. His letter of 8 January 1951 gives no indication of the forthcoming crisis, and his next letter, dated 17 March, says he is sufficiently recovered to write. Two telegrams to his brother on 5 March and 23 March say that he was all right. —Judging by these indications, it is plausible to conclude that the hospitalization took place in February.

31.10.52 My acquaintances tell me that I had not looked so well for a long time already.

1.6.54 I still always do gymnastic exercises regularly in the morning, i.e., I began to do it again a few years ago and it does me much good.

In the autumn of 1954, however, according to his letters of 4 October and 10 December, Gödel was again in poor health. (There were also two telegrams to his brother on 1 December and 10 December.) In the letter of 14 December quoted below, he recalls being sick only twice in the last

nineteen years; undoubtedly the bleeding ulcer was the first time and this occasion in 1954 was the second.

10.12.54 A major part of my trouble was undoubtedly psychically conditioned. For some time [*zeitlang*] I was in a very remarkable psychic state. I had the irrepressible feeling that I have only still a short time to live, and that the familiar things around me, the house, the books, etc., are nothing to me. This paralyzed me in such a way that I could rouse myself to attend to none of my ordinary tasks [*Tätigkeiten*]. This has now also abated, but naturally I have been somewhat reduced in my powers through the whole thing. My whole state is similar to the tooth business in 1934. The causes may even be similar. [In each case he suffered from a minor infection.]

5.1.55 I am also not at all so lonesome as you think. I often visit Einstein and also get visits from Morgenstern and others. I now live [by] myself more than necessary in the past.

5.1.55 I have in any case no time for a hobby, but it is also not necessary at all: since I have various interests outside of my vocation, e.g., in politics, also often view plays and variety programs on television, so that I have sufficient diversion from mathematics and philosophy.

14.3.55 My health is now again quite normal; I have also reached again my former weight. Only my sleep is not quite so good as before. I often wake up early about six and cannot sleep again. This then naturally has the effect that one is less fresh all day long and works more slowly.

Einstein died on 18 April 1955, not long after his seventy-sixth birthday. Gödel was surprised and shaken.

25.4.55 The death of Einstein was of course a great shock to me, since I had not expected it at all. Exactly in the last weeks Einstein gave the impression of being completely robust. When he walked with me for half an hour to the Institute while conversing at the same time, he showed no signs of fatigue, as had been the case on many earlier occasions. Certainly I have purely personally lost very much through his death, especially since in his last days he became even nicer to me than he had already been earlier all along, and I had the feeling that he wished to be more outgoing than before. He had admittedly kept pretty much to himself with respect to personal questions. Naturally my state of health turned worse again during last week, especially in regard to sleep and appetite. But I took a strong sleeping remedy a couple of times and am now somewhat under control again.

21.6.55 That people never mention me in connection with Einstein is very satisfactory to me (and would certainly be to him, too, since he was of the opinion that even a famous man is entitled to a private life). After his death I have already been invited twice to say something about him, but naturally I declined. My health now is good. I have definitely regained my strength during the last two months.

18.12.55 There was yesterday a symphony concert here in remembrance of Einstein. It was the first time I let Bach, Haydn, etc. encircle me for two hours long. Nonetheless, the pianist on the occasion was really fabulous.

In March 1956 Adele returned from a trip to Vienna with her eighty-eight-year-old mother, who lived with them until her death about three years later.

30.9.56 Tomorrow the semester begins again with its faculty meetings, etc. The very thought already makes me nervous. I often think of the nice days with nostalgia, when I had not yet the honor to be professor at the Institute. For that, however, the pay is now higher!

23.3.57 [Marcel] Natkin (from the Schlick Circle) [See Chapter 2] is now in America and I have recently met with him and [Herbert] Feigl in New York. The Schlick Evenings are now thirty years ago, but both of them have really changed very little. I do not know whether this is also the case with me.

27.8.57 I constantly hope that my life comes for once in a calmer track, which would also include, that my oversensitivity to food and cold stops, and that unexpected things do not keep on intruding.

12.12.57 It is indeed true that there are mental recreations in Princeton. But they are mostly classical music and witty comedies, neither of which I like.

10.5.58 Where are the times when we discussed in the Marienbad woods Chamberlain's book on Goethe and his relation to the natural sciences?

14.12.58 Yet I was only really sick twice in the nineteen years since I have been here. That means then once in ten years. But that is really not much.

30.7.59 Recently I have once again very deeply involved myself in work, for which Adele's being away has given the occasion.

11.11.60 My life-style has changed, to the extent that I lie for a couple of hours in the garden.

During the long gap between Gödel's letters of 16 December 1960 and 18 March 1961, he had an extended stretch of ill health.

18.3.61 I always go to sleep very early now, for that I get up rather early and go to the Institute about one hour earlier than before. I am actually much more satisfied with this life-style than my previous one. That my health is now really much better, you surely see sufficiently from Adele's letter.

25.6.61 You could give me a great joy, if you could send me in autumn a price-catalogue (or at least a prospectus) of Mühlhauser or Niennes or their successors. It would interest me very much to know what progress the toy industry has made in the last forty-five years. Are there not also already small atom bombs for children? [This request and the one in his letter of 12 September 1961 were replies to his mother's inquiry about what he wanted for Christmas gifts.]

Adele left for Italy in July and stayed away for more than two months. During her absence Gödel wrote several long letters to his mother which included extended considerations about the afterlife. These passages will be reproduced in Chapter 3.

23.7.61 I live here rather lonesomely and have occupied myself with reading and work all day long—but just in this way I do feel fine. As far as my “normal” eating is concerned, I of course still never eat so much as before this whole business.

12.9.61 You could give me most joy with good books in philosophy, also with classical works. E.g. I would be very glad to have the “Critique of Judgment” by Kant or also the “Critique of Pure Reason” at home, in order to read in them whenever I have the time.

18.12.61 The right Christmas mood one has only in childhood, of which I have once again been vividly reminded by the pretty toy catalogue. [The catalogue was undoubtedly sent in response to Gödel's request in June, quoted above.]

12.6.65 Adele does not play the piano very often, but still many times she does play old Viennese melodies.

13.5.66 We do not socialize with anybody here.

As far as I know, Gödel's health was moderately good from 1962 to 1969. In the beginning of 1970 he was again unwell and thought he was going to die soon. In February 1970 he consulted Dr. W. J. Tate of the Princeton Medical Group, probably after Dr. Rampona had refused to prescribe digitalis. Later that month he called and, after some delays on his part, eventually met with Dr. Harvey Rothberg. The disturbance seems to have been more mental than physical.

In 1974 Gödel was hospitalized for a urinary-tract problem related to the state of his prostate. Dr. James Varney and Dr. Charles Place, two urologists, advised him to have an operation. In addition, Marston Morse recommended to him Dr. John Lattimore, a urologist at the Presbyterian Hospital in New York. Apparently after consulting Lattimore, Gödel decided not to have the operation. Instead, he wore a catheter in his last years.

As mentioned before, by the spring of 1976 his own health problems and Adele's had become Gödel's chief preoccupation. His condition deteriorated rapidly between July and December 1977, after Adele had a major operation and had to be attended to elsewhere while he lived alone at home.

In the 1950s Gödel once wrote that in recent years his weight never exceeded fifty-four kilograms. In 1970 he weighed eighty-six pounds. At his death in 1978 he weighed only sixty-eight pounds. These figures appear to support Dr. Rampona's theory that he had for many years lived off the tissues of his own body.

During our conversations Gödel said little to me about his own or Adele's health problems. In 1976, however, he mentioned these problems several times. In April, after he returned from a brief stay in the hospital, he told me he had a cold and spoke of a thirty-year-long kidney infection, of being sensitive to cold, of a prostate blockage, and of using increased dosages of antibiotics. He admitted having sent out the wrong manuscript on the continuum problem at the beginning of 1970—the result, he said, of taking certain pills that had damaged his mathematical and philosophical abilities.

18.4.76 I had written the paper when I was under the illusion that my ability had returned. Can't expect wrong sayings from one of the greatest logicians. The pills had also affected my practical ability in how to behave, and I did things which were not so beautiful.

10.5.76 I had not been well last night.

11.5.76 Psychiatrists are prone to make mistakes in their computations and overlook certain consequences. Antibiotics are bad for the heart. [E. E.] Kummer was bad in large calculations.

1.6.76 My health problems include my not having enough red blood cells and my indigestion—feeling like a rock.

3.6.76 I have arthritis caused by my cold and received some antibiotic treatment in the hospital.

6.6.76 Mrs. Gödel had a light stroke last autumn. She sleeps in the daytime. Her head is heavy and she can't sit up. She is seventy-six years old and worries about many things. A nervous weakness affects her legs. She was once delirious in Vienna. We employ a nurse. A second stroke may have occurred.

6.6.76 I do not accept the doctors' words. They have special difficulties with me. There is a psychological component in this.

22.6.76 My wife is in the hospital for tests. I cook once every few days.

31.3.77 I need and use a catheter for urinating because of a prostate problem.

17.12.77 I have lost the power for positive decisions. I can only make negative decisions now.

1.3 *Some of His General Observations*

As I mentioned in the first section of this chapter, Gödel's letters to his mother and brother sometimes included general observations embodying aspects of his outlook. They are mostly brief, written in widely accessible language, and can be understood independently of their original contexts. I have included a number of them, without comment, in the following pages.

17.2.48 I would not say that one cannot polemicize against Nietzsche. But it should of course also be a writer [*Dichter*] or a person of the same type to do that.

18.10.49 Marriage is of course also a time-consuming institution.

28.10.49 That one is not pleased in every respect with the vocation is, I believe, unavoidable, even if one has chosen it purely out of one's love for the subject.

27.2.50 What you say about sadness is right: if there were a completely hopeless sadness, there would be nothing beautiful in it. But I believe there can rationally be no such thing. Since we understand neither why this world exists, nor why it is constituted exactly as it is, nor why we are in it, nor why we were born into exactly these and no other external relations: why then should we presume to know exactly this to be all [*gerade das eine ganz bestimmt zu wissen*], that there is no other world and that we shall never be in yet another one?

3.4.50 One cannot really say that complete ignorance is sufficient ground for hopelessness. If e.g. someone will land on an island completely unknown to him, it is just as likely that it is inhabited by harmless people as that it is by cannibals, and his ignorance gives no reason for hopelessness, but rather for hope. Your aversion against occult phenomena is of course well justified to the extent that we are here facing a hard-to-disentangle mixture of deception, credulousness and stupidity, with genuine phenomena. But the result (and the meaning) of the deception is, in my opinion, not to fake genuine phenomena but to conceal them.

In December 1950 Gödel recommended to his mother Philipp Frank's biography *Einstein: His Life and Times* (1947, the original German manuscript was published only in 1950). Apparently Marianne obtained the German version and found it difficult. In reply, Gödel wrote:

8.1.51 Is the book about Einstein really so hard to understand? I think that prejudice against and fear of every "abstraction" may also be involved here, and if you would attempt to read it like a novel (without wanting to understand right away everything at the first reading), perhaps it would not seem so incomprehensible to you.

12.4.52 But the days are much too short, each day should have at least forty-eight hours.

25.3.53 The problem of money is not the only consideration and also never the most important.

10.5.53 And is there anyone you know who lives in a paradise and has no conflicts on anything?

26.7.53 With the aphorisms you have hit upon my fancy. I love everything brief and find that in general the longer a work is the less there is in it.

21.9.53 It is interesting that in the course of half a year *both* the main opponents of Eisenhower (Stalin foreign political, Taft domestic political) have died.

Moreover, the president [*sic*] of the Supreme Court (a creation of Truman's) has now also died. Something so peculiar, I believe, has never happened before. The probability for this is one in two thousand.

28.9.55 If you wish to send me the Einstein biography, please, if possible, send the original text. Or is it neither German nor English? In that case the English version would be preferable, because, as I have already often remarked, translations into English are mostly much better than translations into German.

24.2.56 Ordinarily the reason of unhappy marriages is: jealousy (justified or unjustified), or neglect of the wife by the husband, or political or religious disagreements.

7.11.56 As you know, I am indeed also thoroughly antinationalistic, but one cannot, I believe, decide hastily against the possibility that people like Bismarck have the honorable intention to do something good.

23.3.57 About the relation of art and kitsch we have, I believe, already discussed many times before. It is similar to that between light and heavy music. One could, however, hardly assert that all good music must be tragic?

7.6.58 I believe that half of the wealth of America rests on the diligence of the Americans and another half depends on the ordered political relations (in contrast to the constant wars in Europe).

28.5.61 Recently I have read a novel by Gogol and was altogether surprised how good it is. Previously I had once begun to read Dostoevski but found that his art consists principally in producing depression in his readers—but one can of course gladly avoid that. In any case I do not believe that the best in world-literature is the German literature.

12.11.61 It is always enjoyable to see that there are still people who value a certain measure of idealism.

17.3.62 It is surely rather extraordinary for anybody to entitle an autobiography "The Fairy Tale of My Life," since life is indeed mostly not so pretty. It may of course be that Slezak simply leaves out all the nonpretty, since it is not enjoyable to write about them.

14.5.62 The Slezak biography is, as I see it, chiefly meant humorously. But I doubt that anybody has experienced only the humorous.

17.3.62 You are completely right that mankind does not become better through the moon flight. This has to do with the old struggle between the "natural" and the "human" ["*Geistes*"] sciences. If the progress in history, legal and political science [*Rechts-und Staatswissenschaft*], philosophy, psychology, literature, art, etc. were as great as that in physics, there would not be the danger of an atomic war. But instead of that one sees in many of the human sciences significant regress[ion]. This problem is very actual especially here, inasmuch as, according to American tradition, the human sciences were favored in the middle schools, a fact which

certainly played a considerable part in the ascent of America over Europe. Unfortunately the European influence, with the Russian concurrence (see Sputnik), turns this relation around, as America on the whole, not to its advantage, becomes more and more like Europe.

4.7.62 Recently I have discovered a modern writer [*Dichter*] "Franz Kafka," hitherto unknown to me. He writes rather crazily, but has a really vivid way of portraying things. For instance, his description of a dream had the effect on me, that I had two lively dreams the next night which I still remember exactly—something that never happened to me otherwise.

24.3.63 Of all that we experience, there eventually of course remains only a memory, but just in this way all lasting things retain some of their actuality.

20.10.63 I have yet to read the article in "*Entschluss*" about my work. It was in any case to be expected that sooner or later use of my proof would be made for religion, since it is indeed justified in a certain sense.

16.7.64 An "editor" of our letters would certainly be surprised at the repetitions.

21.4.65 Only fables present the world as it should be and as [if] it had a meaning, whilst in the tragedy the hero is slaughtered and in the comedy the laughable (hence also something bad) is stressed.

3.6.65 I at least have always found that one rests best at home.

Over the years Gödel's views about America changed with the political situation. But he undoubtedly found that his position at the Institute for Advanced Study suited him, and he always expressed the view that the institute treated him well. In the spring of 1953, shortly after he was told of his promotion to a professorship, he wrote:

25.3.53 The Institute pays its members without requiring any performance in return, with the whole purpose that in this way they can pursue their scientific interests undisturbed. I shall as professor also have no obligation to teach. Moreover, the pays here are even higher than those of the universities.

Gödel had no wish to return to Europe and expressed a strong aversion for Austrian academic institutions:

28.4.46 I feel very well in this country and would also not return to Vienna if some offer were made to me. Leaving aside all personal connections, I find this country and the people here ten times more congenial than our own.

Later he refused honorary membership in the Academy of Sciences in Vienna, as well as the Austrian national medal for arts and sciences.

In 1948 he explained his reluctance to visit Europe this way:

9.6.48 I am so happy to have escaped from the beautiful Europe, that I would on no account like to expose myself to the danger, for whatever reason, of my not

being able to return [to Princeton]. I believe that this danger really exists under the present conditions.

Three years later he wrote:

12.11.51 Except for the fact that you live in Vienna, I am not at all eager to go to Europe, and especially to Austria.

To his mother's observation that evil forces were at work in Europe, he responded:

31.10.52 This is of course true here too, the difference is only that they are in Europe enduring at the helm, here only temporarily and partly.

1.4 *Marriage*

Adele Porkert was born 4 November 1899 and died 4 February 1981. She was six-and a-half years older than Gödel and came from a family much poorer and less cultured than his. She had little formal education or intellectual aspiration and was slightly disfigured by a facial birthmark. Her first, brief marriage to a photographer named Nimbursky was apparently unhappy. According to Gödel's description in 1953,

14.4.53 Adele is by nature certainly harmless and good-natured, but evidently has a nervous streak that was aggravated by her experience, especially the strict upbringing at home and her first marriage.

When Gödel first met her in 1928, Adele was living with her parents near the apartment shared by Gödel and his brother. At the time, Adele was working at *Der Nachtfalter*, a nightclub located at Petersplatz 1 where Gödel often went to visit her after they became acquainted. Later, in America, Adele still recalled those ventures into Viennese nightlife vividly and with delight.

Gödel's parents objected strongly to this relationship. After his father's death in February of 1929, his mother's objections seem to have been the main reason why Gödel kept his relationship with Adele separate from his family life and did not marry her until 1938. Undoubtedly the need to separate these two close relationships imposed a great mental burden on Gödel during these years and may well have contributed to the crises he suffered in 1931, 1934, and 1936.

Gödel's mother moved from Brno to Vienna in November of 1929 and lived with her sons in a large apartment until November of 1937. Gödel and Adele were married on 20.9.39. (When I wrote up what Gödel had told me about his intellectual development in 1976, I added, from standard references, the date of his marriage. He asked me to delete the sentence, on the ground that his wife had nothing to do with his work.)

Later in life Adele expressed regret that they had had no children. They began their settled married life after they moved to Princeton in March 1940, and at first Gödel was appointed to the institute annually. Only in the beginning of 1946 was he offered a permanent position. It seems likely that Gödel did not want children, at least not before getting a secure position. By 1946, however, Adele was already forty-six, rather old to bear a first child. For Adele life in Princeton was not nearly as satisfactory as it was for Gödel himself, even though he undoubtedly shared her sense of loss at having moved away from the familiar places of their youth. There are several references to her state of mind in his letters:

16.4.46 Unfortunately Adele does not share my enthusiasm for this country at all.

16.3.47 Adele does not like the apartment but would like to live in a fairly new house. She does not like living in a small town. But the main reason for being dissatisfied is to be separated from her folks. And she has great difficulty in relating herself to the people here.

11.9.49 [The first problem was resolved after they moved into their own house at 129 Linden Lane.] Adele is very happy and works from morning till night in the house.

In May 1986 Alice (Lily) von Kahler, who also came from Vienna and was for many years a close friend of the Gödels in Princeton, spoke about Adele's life there and her marriage with Gödel (quoted in Schimanovich et al. 1995):

1.4.1 For her the matter [of adapting to life in Princeton] was not so simple [as for me], because she could not even manage with English so well, having come from another social circle. Even though she was very intelligent, there was perhaps some difficulty in her being accepted here.

1.4.2 She was not a beauty, but she was an extraordinarily intelligent person and had an extremely important role [in his life], because she was actually what one calls the life-line. She connected him to the earth. Without her, he could not exist at all.

1.4.3 A complicated marriage, but neither could exist without the other. And the idea that she should die before him was unthinkable for him. It is fortunate that he died before her. He was absolutely despondent when she was sick. He said, "Please come to visit my wife."

1.4.4 She once told me, "I have to hold him like a baby."

Georg Kreisel, who often visited the Gödels from the mid-1950s to the late-1960s, made similar observations about Adele and the marriage (Kreisel 1980:151, 154–155):

1.4.5 Gödel himself was equally reticent about his personal history, but his wife talked more freely about it, usually in his presence.

1.4.6 It was a revelation to see him relax in her company. She had little formal education, but a real flair for the *mot juste*, which her somewhat critical mother-in-law eventually noticed too, and a knack for amusing and apparently quite spontaneous twists on a familiar ploy: to invent—at least, at the time—far-fetched grounds for jealousy. On one occasion she painted the I.A.S., which she usually called *Altersversorgungshheim* (home for old-age pensioners), as teeming with pretty girl students who queued up at the office doors of the permanent professors. Gödel was very much at ease with her style. She would make fun of his reading material, for example, on ghosts or demons.

Gödel's mother was critical of Adele, and so naturally Adele was uncomfortable in her presence. This conflict created many difficulties for Gödel, as his letters to his mother show quite clearly. Friends noticed the problem too. As Dorothy Morgenstern observed, "I am not sure that Mrs. Gödel really approved of her daughter-in-law, so I always have the feeling that, when she came, they were both sort of suffering."

Given Adele's discomfort in Princeton, it is not surprising that she wanted to travel and visit her own family. Because Gödel was not willing to travel, especially to Europe, Adele made a number of extended trips by herself, leaving Gödel alone in Princeton. This was a major source of resentment for Gödel's mother, both because of the expense and because she believed Adele was not taking proper care of her husband. Gödel had to make many explanations in defense of Adele, and on several occasions he noted that he worked exceptionally hard when Adele was away.

In 1947 Adele went back to Vienna to spend about seven months with her family. After more than seven years, this was her first opportunity to go—because of the war and its aftermath. For the next few years she stayed in America, vacationing with Gödel at the seashore near Princeton in the summers, enjoying their house, and avoiding the expense of a trip to Europe. In March of 1953, after Gödel received the Einstein Prize (two thousand dollars) and was promoted to professor, Adele took her second trip to Europe when she learned her sister was dangerously ill.

Judging from Gödel's letters, his mother was very angry about this trip, and for the next few years she and Adele were estranged from each other. In his letter of 25 March 1953, Gödel defended Adele's trip and her "sudden" arrival in Vienna by air. He had sent his brother Rudi a telegram in advance, but, for some reason, their mother had not seen it. The fare for a tourist-class flight was not much more expensive than travel by boat.

25.3.53 There is certainly no ground to say that Adele keeps me isolated. As you well know, I like best to be alone and to see nobody except a couple of intimate friends.

25.3.53 In any case one cannot say at all that she prevents me from coming; on the contrary, she steadily urges me to travel.

25.3.53 For you to come here in Adele's absence is of course hardly possible now—just when you are afflicted with her.

In the next letter Gödel again pleaded for Adele, this time in connection with money matters.

14.4.53 There is also no ground for you to be bitter over my writing that I spend for myself only what is necessary, since the "necessary" includes yearly summer vacations and arbitrarily many taxis. In other words, I do not spare anything for myself and can spend no more on myself even if I had the most frugal wife in the world. As you know, I have no need to travel, and to buy books would have little sense, since I can get all that interests me more simply and more quickly through libraries. When you write that, you now see, you have "always judged Adele right" and that Adele plays comedy and theater, it is definitely false.

14.4.53 It is a difficult matter here to restrict a wife in her spending, since it is the *general* custom that man and wife have a joint account and the wife can use the account as she will.

In February of 1956 Adele went to Vienna for the third time and visited Gödel's mother. On 24 February 1956 Gödel wrote, "I am very happy to hear that Adele visited you and everything has again become all right." That March, Adele brought with her to Princeton her own mother, who lived in their house and died about three years later.

For about eight years Gödel made plans to go to Europe to see his mother (in Vienna or Leipzig or Hanover), but each time he changed his mind. Finally, on 11 November 1957 he wrote inviting her to Princeton. She and his brother came in May of 1958, and she repeated the visit in 1960, 1962, and 1964. In 1966 his mother wanted very much to be with him on his sixtieth birthday in April but was too weak to travel. She died in July.

Adele did not travel while her mother was living with them. After her mother's death in March of 1959, Adele took a summer vacation in the White Mountains of New Hampshire, then went to Vienna from October to December. Gödel's mother again objected to the European trip and Gödel wrote in reply:

6.12.59 There is really nothing special at all about Adele's travel, when one reflects that many of my colleagues travel there almost every year and bring their wives with them. It is true that in these cases they usually reduce the travel costs through lectures over there. But just because I do not do this, I will nonetheless not let Adele suffer for it, especially this year when she needs after all a diversion after the death of her mother.

Adele again went to Vienna in the autumn of 1960 and again Gödel feared a clash between his mother and Adele.

18.11.60 That my last letter was written in an irritated tone is unquestionably a false impression, because I was not at all testy. As I wrote it, I was only afraid that another disharmony between you and Adele might arise—a situation which would of course have very unfavorable consequences for our life here.

In 1961 Adele was in Italy from July to September. Gödel wrote to his mother on 23 July to express the hope that she was not upset by this. On 12 September he said: “You wrote that everyone condemns her going away for so long. But since I have nothing against it and am well taken care of, I do not know what there is to object to.” The next year, on 27 August 1962, Gödel wrote that “This year Adele is, for the first time in a long while, spending the whole summer here, and has gladly spent the money thus saved in beautifying our home.”

In earlier passages I extensively documented Gödel’s health situation and his preoccupation with it. Given Adele’s importance to him, it is easy to understand why he was also very much concerned with Adele’s health. Indications of his concern began to appear in the mid-1960s; on the whole Adele’s health seems to have been good up to that time.

On her first trip to Italy in the summer of 1961, she enjoyed a stay in Ischia that, according to a letter Gödel wrote to his mother in 1965, enabled her to cure her maladies:

3.6.65 Adele is now in the middle of preparing for her trip. She will in June travel again to Ischia for cure, because her rheumatism and other maladies, which were completely cured in Ischia, have returned.

3.6.65 [To his brother.] Adele went to see Dr. Rampona and he said to me that Ischia is unquestionably the right place for her pains in the limbs.

In his letter of 19 August 1965 Gödel said he had recently been very much worried over Adele’s state of health. On the one hand, she felt wonderful after taking the baths. On the other hand, the baths were bad for her high blood pressure and she had to get injections:

1.4.7 That there is something wrong with her health, one can also see from the fact that she has lost all her zest for adventure and would have liked best to come home already at the beginning of August, but had obeyed the doctor to continue the cure. I have now booked for her a direct flight from Naples to New York on the 24th, and hope that the travel will do her no harm.

In his letter of 23 September 1965 he apologized that, for the first time in twenty years, he had completely forgotten his mother’s birthday (on 31 August): “This probably has to do with my (unnecessary) worry on account of Adele in August.”

My impression is that Adele's health really became a matter for serious concern only in the 1970s. As I mentioned earlier, Gödel told me about various problems in 1976, and, subsequently, about the major operation she underwent in July of 1977. She also had two strokes before then, probably some time after 1974 or 1975. It was clear to me by the spring of 1976 that Gödel's chief concern in life was with his own health and Adele's.

I met Adele only a few times. In June 1952 when she and Gödel came to Cambridge to receive the honorary degree from Harvard, I met them at the dinner and the reception at the home of W. V. Quine. On this occasion Adele had prepared some special food for Gödel, and she urged him to move to Harvard because people there were so nice to them. I also visited them at the guest house next door to the Faculty Club, bringing for Adele the newspapers reporting on the honorary-degree ceremony, as she had requested.

In September 1956 Georg Kreisel took me to their house for afternoon tea. Adele was present but did not say much. I remember that we discussed Turing's suicide and that Gödel asked whether Turing was married. On being told that he was not, he said, "Perhaps he wanted to get married but could not." This observation indicated to me the importance Gödel attributed to marriage for a man's, and perhaps also for a woman's, life and death.

Two days after Gödel's death on 14 January 1978 I went to see Adele, having learned the news from Hassler Whitney that morning. On this occasion Adele told me that Gödel, although he did not go to church, was religious and read the Bible in bed every Sunday morning. She also gave me permission to come on 19 January to the private funeral service, where, of course, I saw her again.

1.5 Politics and His Personal Situation

Gödel was a cautious man in practical matters. As far I know, he never took any political stand in public. It is generally assumed that he had little interest in politics. As I mentioned before, Karl Menger complained that Gödel appeared indifferent to politics even in 1939, when the situation in Europe so much affected his own life. On the other hand, apart from his reported interest in socialism in 1931, the only indications of political opinions are in the letters he wrote between 1946 and about 1963. Perhaps this was the only period in his life when he took a strong interest in politics, as the following selection from his letters suggests.

Gödel admired Roosevelt and Eisenhower, disliked Truman, detested Joseph McCarthy, and liked Henry Wallace and Adlai Stevenson. On 31 October 1951, toward the end of Eisenhower's first presidential campaign,

he wrote "I have occupied myself so much with politics in the last two months that I had time for nothing else." (Einstein found his preference for Eisenhower over Stevenson very strange.) On 5 January 1955, in reply to a question from his brother about his "hobby," he wrote "I could at most name politics as my hobby; it is in any case not so completely unpleasant in this country as in Europe." By 7 August 1963 his interest in politics had gradually reached a low point: "I have more or less lost contact with politics, nowadays I very rarely look at the newspaper."

After the victory of the Republican Party in the mid-term congressional elections in 1946, Gödel wrote to his mother:

22.11.46 You have probably already read about the "landslide" result of the election here fourteen days ago. So the Republicans (i.e., the reactionaries) are now again in power (for the first time since 1933). The development has indeed already gone in this direction since Roosevelt's death [on 12 April 1945] and I have the feeling that this, incredible as it may sound, has also already shown itself in everyday life in various ways. E.g., the films have decidedly become worse in the course of the last year. Princeton University is now, throughout many months, celebrating the two hundredth year jubilee of its founding. Remarkably this is linked to a great secret-mongering: I.e., the scientific lectures and discussions are in part only open to invited guests, and even when something is public, one speaks, as much as possible, only about banalities, or a lecturer is selected who speaks so unclearly that nobody understands him. It is downright laughable. Science has now (chiefly because of the atom bomb) on the whole the tendency of turning itself into secret-science here.

Gödel often expressed his admiration for Roosevelt and for Roosevelt's America:

5.1.47 When you say it is good that the Americans have the power in hand, I would unconditionally subscribe to it only for the Rooseveltian America. That Roosevelt could no longer exert influence on the conclusion of the peace treaties and the establishment of the new League of Nations [*sic*] is certainly one of the most deplorable facts of our century.

29.9.50 True, I have already often criticized America: but only just in the last few years; formerly I was still thoroughly enchanted.

According to a book on Einstein in America, "Einstein was so disgusted with Truman's reckless handling of foreign policy that he vigorously supported the quixotic, third-party candidacy of Henry Wallace in 1948." Gödel apparently shared Einstein's views on Truman and Wallace.

9.6.48 The political horizon here also appears to be brightening up somewhat. You have perhaps heard about the great success that Henry Wallace, a close colleague of Roosevelt's, had on his campaign tour. This seems to prove yet at least that the country is not as reactionary as the present regime. It remains, however, very questionable whether he can receive enough votes to become the president.

26.2.49 What do you think of the beautiful expression, which President Truman inflicts on his political opponents in his public speeches? In any case he said, according to the local habit, only the initial letters S.O.B. (son of a bitch).

With regard to the Korean War, Gödel wrote on 1 November 1950: "But at any rate it is clear that America, under the magic word 'Democracy,' carries on a war for a completely unpopular regime and does things in the name of 'policing' for the UN, with which the UN itself is not in agreement."

Several of his letters contain comments in favor of Eisenhower:

10.3.52 It would be nice if Eisenhower would get elected in autumn.

6.1.54 You question my opinion about the political development. But I find that good things have happened under Eisenhower. 1. The cease-fire in Korea, which has, in my opinion, saved us from a third World War. 2. The reduction of the military budget by about three billion dollars. 3. the cessation of the inflation, which has lasted six years. I believe, however, that is just the beginning, since a new president certainly cannot get into a new course in one day.

16.1.56 It is a gross exaggeration to say that today the political climate in America is symbolized by [Joseph] McCarthy (who is undoubtedly the American Hitler). The influence of McCarthy has sunken almost to zero since Eisenhower became president. [In his letter of 5 May 1954 Gödel credited the Eisenhower regime with "the unmasking of McCarthy."]

16.12.60 I believe that people generally underestimate what Eisenhower has done in the last eight years for mankind. When he leaves, much will turn to the worse, especially also with regard to the peace of the world.

Although Gödel preferred Eisenhower over Stevenson for the presidency, he also thought well of Stevenson:

26.7.65 Stevenson is dead. He was one of the few sympathetic politicians. He is difficult to replace: the U.S. foreign policy will probably become even more unreasonable through his death.

Gödel's opinion of Kennedy changed between 1961 and 1963:

30.4.61 With regard to the new president, one sees quite clearly already where his politics is leading: war in Vietnam, war in Cuba, the belligerent Nazis or fascists (in the form of "anticommunist" organizations) beginning to bloom, more rearmament, less press freedom, no negotiations with Khrushchev, etc.

28.5.61 In other aspects Kennedy now looks more congenial than before the election and I believe that Adele is right that he often has an insidious expression in the eyes.

24.3.63 In the realm of politics it appeared for a long time that an atomic war could break out any day. But fortunately Khrushchev and Kennedy are both rational in this regard.

20.10.63 With regard to the politics and the gold reserve in America, I had little time in recent months to devote myself to such matters. But in general the international situation has certainly improved substantially and Kennedy has proven himself to be a better president than was to be expected originally and by the Cuban adventure.

Gödel was unambiguously against the American involvement in the war in Vietnam:

21.10.65 Have you heard about the belligerent demonstrations against the war in Vietnam? They are right. It took Eisenhower to end the war in Korea. But scarcely had he returned, exactly the same thing began in Vietnam.

20.1.66 The peace offensive in Vietnam is very welcome, but Johnson has waited so long in this matter, till people here have already nearly thrown rotten eggs at him (if not also literally).

1.6 *Companion of Einstein*

From about 1942 to April of 1955 Einstein and Gödel frequently walked together while conversing. They were a familiar sight in the neighborhood of the Institute for Advanced Study. Although others have occasionally noted their close friendship, few details are known, for it was primarily a private matter, and there is scarcely any record of their discussions, which were almost certainly undertaken entirely for their own enjoyment. According to Ernst G. Straus, who was with them a good deal in the 1940s,

1.6.1 The one man who was, during the last years, certainly by far Einstein's best friend, and in some ways strangely resembled him most, was Kurt Gödel, the great logician. They were very different in almost every personal way—Einstein gregarious, happy, full of laughter and common sense, and Gödel extremely solemn, very serious, quite solitary, and distrustful of common sense as a means of arriving at the truth. But they shared a fundamental quality: both went directly and wholeheartedly to the questions at the very center of things (in Holton and Elkena 1982:422).

They were both great philosopher-scientists—a very rare breed indeed, which appears to have become extinct as a result of intense specialization, acute competition, obsession with quick effects, distrust of reason, prevalence of distractions, and condemnation of ideals. The values that governed these philosopher-scientists are to a large extent now considered out of date, or at least no longer practicable in their plenitude. Admiration for them takes the form of nostalgia for a bygone era, or they are regarded as fortunate but strange and mysterious characters. Their lives and work also suggest questions for somewhat idle speculation: What would they be doing if they were young today? What types of cultural,

social, and historical conditions (including the state of the discipline) are likely to produce their sort of minds and achievements like theirs?

There is a natural curiosity about the life and work of people like them. Much has been said about Einstein, and there are signs indicating that a good deal will be said about Gödel as well. Their exceptional devotion to what might be called "eternal truth" serves to give a magnified view of the value of our theoretical instinct and intellect. Reflections on their primary value may also provide an antidote to all the busy work now going on; they may supply a breath of fresh air, and even point to the availability of more spacious regions in which one could choose to live and work.

Both Einstein and Gödel grew up and did their best work in Central Europe, using German as their first language. In the "miraculous" year of 1905, when he was about 26, Einstein published articles on Special Relativity, on the light-quantum, and on Brownian motion. Gödel had done his work on the completeness of predicate logic and on the inexhaustibility of mathematics before reaching the same age. Einstein went on to develop General Relativity, and Gödel moved to set theory, where he introduced an orderly subuniverse of sets (the "constructible" sets), which yielded the consistency of the continuum hypothesis and which has been to date the single most fruitful step in bringing order into the chaos of arbitrary sets. (His work on Einstein's equations followed, as a digression and a byproduct of his study of the philosophical problem of time and change. He once told me that it was *not* stimulated by his close association with Einstein.) During the last few decades of their lives, both of them concentrated on what are commonly thought to be unfashionable pursuits: Einstein on the unified theory and Gödel on "old-fashioned" philosophy.

The combination of fundamental scientific work, serious concern with philosophy, and independence of spirit reaches in these two men a height that is rarely found and is probably unique in this century. The supreme level of their intellectual work reminds one of the seventeenth century, sometimes called the "century of genius," when important work was given to the world by such geniuses as Kepler, Harvey, Galileo, Descartes, Pascal, Huygens, Newton, Locke, Spinoza, and Leibniz.

One indulgence leads to another. If we pair Einstein with Gödel, why not extend the familiar association of Einstein with Newton by analogy? The riddle is, then, to look for an x such that Einstein is to Gödel as Newton is to x . The obvious candidates are Descartes and Leibniz. Gödel's own hero is Leibniz, another great logician. Moreover, Gödel considers Leibniz's monadology close to his own philosophy. At the same time, the clean and conclusive character of Gödel's mathematical innovations may be more similar to Descartes's invention of analytic geometry, and his sympathy with Husserl appears to be closer to Descartes's predominant

concern with method, with a new way of thinking and the beginning of a new type of philosophy. Another likely candidate is Pascal, who, like Gödel, often went against the spirit of his time.

During his lifetime Gödel was much less well known to the general public than his friend. In a 1953 letter to his mother, undoubtedly in response to a question from her, Gödel comments on the burden of fame:

9.12.53 I have so far not found my “fame” burdensome in any way. That begins only when one becomes so famous that one is known to every child in the street, as is the case of Einstein. In that case, crackpots turn up now and then, who desire to expound their nutty ideas, or who want to complain about the situation of the world. But as you see, the danger is also not so great; after all, Einstein has already managed to reach the venerable age of 74 years.

Gödel’s fame has spread more widely since his death in 1978. The growing attention to him and his work is undoubtedly related to the increasingly widespread application of computers. For example, one symposium held as a memorial to him announced its theme as “Digital Intelligence: From Philosophy to Technology.” Indeed, it may be that the connection between Gödel’s work and computers is closer than that between Einstein’s work and the atom bomb, about which Gödel says in a 1950 letter to his mother:

11.5.50 That just Einstein’s discoveries in the first place made the atom bomb possible, is an erroneous comprehension. Of course he also indirectly contributed to it, but the essence of his work lies in an entirely other direction.

I believe Gödel would say the same thing about the connection between his own work and computers. The “entirely other direction” is fundamental theory, which constituted the (central) purpose of life for both Gödel and Einstein. This common dedication, their great success with it (in distinct but mutually appreciated ways), and their drive to penetrate deeper into the secrets of nature—the combination of these factors undoubtedly provided the solid foundation for their friendship and their frequent interactions. Each of them found in the other his intellectual equal who, moreover, shared the same cultural tradition. By happy coincidence, they happened to have been, since about 1933, thrown together in the same “club,” the Institute for Advanced Study.

Gödel was generally reluctant to initiate human contacts and was comfortable with only a small number of individuals, especially during his Princeton years. There were undoubtedly a number of other people who would have enjoyed social interaction with him; but few had the confidence or the opportunity. In the case of Einstein, of course, there was no problem of confidence, and there was plenty of opportunity. Moreover, both of them had thought exceptionally deeply and articulately about

science and philosophy on the basis of a wealth of shared knowledge. There is every indication that both of them greatly enjoyed each other's company and conversation. Indeed, their relationship must have been one of the most precious experiences of its kind.

Oskar Morgenstern, who knew Gödel well and was also acquainted with Einstein (probably through Gödel), wrote to the Austrian government toward the end of 1965 to recommend honoring Gödel on his sixtieth birthday:

1.6.2 Einstein has often told me that in the late years of his life he has continually sought Gödel's company, in order to have discussions with him. Once he said to me that his own work no longer meant much, that he came to the Institute merely 'to have the privilege to walk home with Gödel.' [The "late years" probably began in 1951, when Einstein stopped working on the unified theory.]

The letters to his mother make it clear that Gödel valued Einstein's company just as highly as Einstein valued his. What was involved is, I think, a fascinating example of human values which may perhaps be helpful in testing ethical theories in particular, such theories as, John Stuart Mill's "principle of preference," which proposes to guide the ranking of pleasures. More than a quest for definite results or even an airing of personal troubles, their talks may appropriately be considered to have served a "purposeless purpose" based on a "disinterested interest." From a common and ordinary perspective, they might be thought to have engaged in a "useless" activity. Yet their genuine enjoyment strikingly reveals a type of value many of us can only dimly see or have experienced only in a limited degree. Could we, perhaps, call this underlying value that of *pure and free inquiry*—which is usually a solitary affair—*as an end in itself*? Surely, the devotion of Gödel and Einstein to this value had much to do with their extraordinary level of intellectual achievement.

After Einstein's death, Gödel responded to an inquiry from Carl Seelig by saying that he and Einstein had talked particularly about philosophy, physics, politics, and, often, about Einstein's unified field theory (although, or perhaps because, Einstein knew that Gödel was very skeptically opposed to it). What is presupposed in Gödel's statement is, I am sure, a large area of agreement in their tastes and in the value and importance they placed on particular questions and ideas. They shared also a good deal of knowledge (including judgments on what is known and what is not), as well as a great talent for expressing their thoughts clearly. In the rest of this chapter I contrast their outlooks by looking at some of their agreements and disagreements.

Both Einstein and Gödel were concerned primarily, and almost exclusively in their later years, with what is fundamental. For example, Einstein (Schilpp 1949:15; Woolf 1980:485) often explained his choice of physics

over mathematics partly in terms of his feeling that mathematics was split up into too many specialties, while in physics he could see what the important problems were. He said to Straus, however, that “Now that I’ve met Gödel, I know that the same thing does exist in mathematics.” In other words, Einstein was interested in problems fundamental to the whole of mathematics or the whole of physics, but could initially discern them only in the case of physics. Gödel once told me, almost apologetically (probably to explain why he had so little of what he considered success in his later decades), that he too was always after what is fundamental.

Neither Einstein nor Gödel (contrary to prevailing opinion in the physics community of their time) considered quantum theory to be part of the ultimate furniture of physics. Einstein seems to have been looking for a complete theory within which quantum theory would be seen as a derivative ensemble description. In physics, according to Gödel, the present “two-level” theory (with its “quantization” of a “classical system,” and its divergent series) was admittedly very unsatisfactory (Wang 1974:13).

In the letters to his mother, Gödel often explains Einstein’s attitude with sympathy. In 1950 he commented on an article calling Einstein’s theory “the key to the universe,” and declared that such sensational reports were “very much against Einstein’s own will.” He added, “The present position of his work does not (in my opinion) justify such reports at all, even if results obtained in the future on the basis of his ideas might perhaps conceivably justify them. But so far everything is unfinished and uncertain.” This opinion, I think, agreed, essentially, with Einstein’s own.

These and other examples of agreement between Einstein and Gödel reveal a shared perspective which was contrary to common practice and the “spirit of the time” and which constituted a solid foundation for their mutual appreciation. Against this background, their disagreements and differences were secondary. Indeed, in other aspects as well, the opposition of their views can usually be seen as branchings out from a common attitude.

Both of them valued philosophy, but they disagreed on its nature and function. They were both peace-loving and cosmopolitan in outlook, but, unlike Einstein, Gödel took no public political positions. They were both sympathetic to the ideal of socialism, but Gödel’s skepticism toward prevalent proposals on how to attain it contrasts with the less restrained view expressed in Einstein’s 1949 essay “Why Socialism?” (reprinted in 1954). There is a sense in which both men could be seen as religious, but Einstein spoke of accepting Spinoza’s pantheism, while Gödel called himself a theist, following Leibniz. (In 1951 Gödel said of Einstein, “He is undoubtedly in some sense religious, but certainly not in the sense of the church.”)