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LEARNING TO READ AND WRITE 1938–57

Nobody ever writes two books – My parents – Hitler occupies Denmark – Talking in kindergarten – A visionary teacher – The class newspaper – “The topic” – An elite high school – Variety of teachers – Chemical experiments – Playing tennis with a champion – Listening to jazz – “Ulysses” and other novels.

Walking home from a Caltech party in the 1970s, I told Don Knuth that I was working on my second book. He turned to me and said “Nobody ever writes two books!” I should know—this is my tenth book. It tells the story of my professional life and my impressions of the birth of modern programming with anecdotes about software pioneers I have known.

As a student of electrical engineering, I dreamt of making fundamental contributions to a new field. In 1963, I graduated from the Technical University of Denmark without any programming experience—it was not yet being taught. There were, as far as I remember, no textbooks available on programming languages, compilers or operating systems. That was my main reason for choosing to work in computing!

Over the next forty years I worked as a systems programmer in Denmark and a computer scientist in America. I witnessed computer programming change from an amateur activity into something resembling an engineering discipline, and was fortunate to contribute to the early development of operating systems and concurrent programming.

In this autobiography, I trace my school years, engineering studies, and the beginning of my career in Denmark. And I recount my exciting and frustrating years as a researcher at Carnegie-Mellon, Caltech, USC, University of Copenhagen, and Syracuse University.

I wrote the book for fun. I assume you know how to use a computer and are interested in programming. My story is mostly told in nontechnical detail. In a few places, where the story gets a bit technical, I explain the gist of the ideas.

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You may well wonder why I describe my school days in a book about my professional life. Well, over the years, I have learned that, besides *intellect*, the most valuable asset of a programmer is the ability to *write clearly*. Needless to say, I wasn't born with a talent for writing well. But, thanks to my teachers, I learned to write nontrivial essays in elementary school through high school.

Now, if you don't write really well when you graduate from high school, you probably never will. Since I consider my writing skills to be far more important than my engineering background, I will begin my story by telling you how I learned to read and write.

After half a century, the memories of my childhood and youth are naturally somewhat fragmentary. And, like your life, mine did not follow a coherent script. I must also confess that some of my more "random" impressions are included simply because I find them amusing—as I hope you will too.

My parents, Jørgen Brinch Hansen and Elsebeth (née Ring), lived in Frederiksberg, a suburb of Copenhagen, Denmark. I was born on November 13, 1938, and nicknamed "Busser" after a popular cartoon character. (Americans know him as Blondie's husband Dagwood.)

My mother was the daughter of the Danish composer Oluf Ring. She was a charming, vivacious woman with a beautiful smile. Before marrying my father she worked in one of the best hairdressing salons in Copenhagen. On pictures from my childhood she is always well dressed and, even on the beach, her hairstyle looks perfect. When I was little, she liked to go shopping in the center of Copenhagen with me dressed in my best. I would rather have stayed at home playing with friends, but that was not an option.

When the neighbors complained about me (as they often did) my mother would try to hide it from my father. This was, however, impossible on the occasion when I threw a cobblestone through a basement window across the street. What a lovely sound that was! When my father heard about it (and the repair costs) he spanked me and sent me to bed without dinner. When that happened, my mother would usually sneak a sandwich into my bedroom.

People liked my mother and found her fun to be with. In her forties she visited Italy with her sister and brother-in-law. At an outdoor theater in Rome, some tourists were relaxing in front of an empty stage. My mother immediately walked up on the stage and danced across it to the applause of

the audience.

My mother smoked constantly. Even when she was cooking, she held a cigarette in her mouth and tilted her head to avoid getting smoke in her eyes.

She also had a taste for strong coffee. I once offered to demonstrate to my graduate student, Jon Fellows, how coffee was meant to taste. First I made a portion of normal (weak) American coffee. After letting the coffee drip through a second portion of ground coffee, Jon and I enjoyed a cup of real Danish coffee. The next day he told me that his heart beat so fast he had to lie down at home.

My father was a tall, handsome man. On pictures he often looks stern and unsmiling. He was very intelligent, but rather silent. His mother died when he was only nine years old. His father then married a woman who talked incessantly. She left my father with a distaste for small talk. I suspect he often made people feel uncomfortable.

In 1935, he graduated in civil engineering from the Technical University of Denmark. My father apparently found one class a waste of his time. Paperback editions of Danish textbooks had to be cut open, page by page, before you could read them. At his oral exam in Road Construction, my father showed his disdain for the subject by bringing an uncut (unread) version of the professor's textbook to the examination table. The professor rewarded him with the extremely low grade of mdl+. This reduced my father's total grade point average on his diploma from ug– to mg+. (The Danish grades, ug–, mg+, and mdl+, correspond roughly to A–, B+, and D– in America.)

For twenty years, he worked for Christiani & Nielsen, a Danish engineering company that built harbors, docks, bridges, tunnels, airports, roads and railways all over the world. One of his first tasks was to design procedures for lowering nine tunnel elements to the bottom of the river Maas in Rotterdam, one of Europe's most heavily trafficked waterways. At the time it was the longest underwater tunnel in Europe. Each tunnel element, weighing 15,000 tons, was 180 feet long, 75 feet wide and 27 feet tall.

In May 1940, the German army invaded Holland. When the last tunnel piece had been lowered in December 1940, my father returned home on one of the last commercial flights from Rotterdam. The flight must have been somewhat unnerving: the Germans had painted the cabin windows white to prevent the passengers from discovering military secrets from the air.

After the war, my father became recognized as one of the world's leading

experts in soil mechanics. In 1953, he was promoted to chief engineer at the C&N headquarters in Copenhagen. Two years later he accepted a professorship in Soil Mechanics and Foundation Engineering at the Technical University of Denmark.

A Norwegian colleague wrote:

In several respects Brinch Hansen's personality was governed by his consistency and his requirement for a logical and rational approach to all problems. This gave him an appearance which could easily be interpreted by outsiders as reserved superiority. On the contrary, those who knew him learned to appreciate his ability to discuss frankly the facts in any problem and also his loyal and honest character. (Bjerrum 1969)

I vividly remember when my father asked his driving instructor to demonstrate parallel parking. My father thought it would be most convenient to do this on our street on a Sunday afternoon. So my parents ended up practicing this difficult maneuver right in front of our neighbors and their kids. I can only imagine what my mother must have thought.

If my father thought something made sense, he never hesitated to take an unpopular stand. Once he invited me to attend a talk at the Danish Academy of Engineering. After the talk, the members voted on some proposal. While my father voted against it, everybody else voted for it.

After a stormy marriage, my parents separated when I was sixteen years old. This was a great tragedy for my mother who still loved him and never had a relationship with another man. She provided a stable, loving home for my sister and me, until she died on December 7, 1962, at age 50, a month before I finished my engineering studies. My father died on May 27, 1969 at age 60, the year before I emigrated to the United States.

My books on *The Architecture of Concurrent Programs* (1977) and *Studies in Computational Science* (1995) are dedicated to my parents.

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On April 9, 1940, Hitler invaded Denmark. As a sixteen-month old child, I watched German bombers circling low above the rooftops of Copenhagen dropping leaflets. Since Hitler's real target was Norway, the leaflets looked as if the Germans were trying to save money by writing in a mixture of Danish and Norwegian.

The German occupation did not play a major role in my early childhood. It was, after all, the only life I knew until I was seven years old. But the war years were not so easy for my parents. Most everyday necessities were rationed, including food, clothing, soap, and tobacco. There was a severe shortage of fuel for electricity, heating and transportation. The Germans imposed a curfew which forced people to stay overnight when they visited friends and relatives in the evening.

I remember a couple of violent episodes on our street. One day, a man was shot in front of me. The next day, I watched a street sweeper sweep a large pool of blood into the gutter. It was rumored that the victim was shot simultaneously from opposite ends of the street (which could not possibly have been true, unless the assassins were suicidal). On another occasion, a man was killed when Nazis blew up his villa in the middle of the night across the street from our apartment building. I believe he was a member of the resistance movement. After the war, an apartment complex, built in his garden, was named Bomhoffs Have in his memory.

Although the Germans inflicted more inhumane suffering on other countries, many lives were lost in Denmark. During the occupation, the Germans executed a hundred saboteurs, and sent 150 communists and 500 Jews to concentration camps. However, the Danes helped close to 7,000 Jews escape to Sweden on small fishing boats.

The war ended on May 4, 1945, when the German forces in Denmark capitulated to Fieldmarshal Montgomery. Had the Russians reached the Danish border before the English Army did, my life would have been very different.

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In 1944, at age 6, I went to Miss Hansen's kindergarten on Lykkesholms Alle in Frederiksberg. She had her own way of keeping 33 little kids reasonably quiet. If you talked too much, you were placed on a tall chair during the lunch break facing the other children with your mouth covered by a towel. It doesn't seem to have worked in my case. I still talk too much instead of listening.

I don't remember if we learned the alphabet in kindergarten. But I have an early memory of crying in frustration, while my mother helped me tell the difference between the letters *h* and *k*.

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On September 1, 1945, I began my elementary education at Niels Ebbensensvej school in Frederiksberg in a class of 39 boys. For the next five years, we had the same teacher in all subjects. His name was Konrad Jahn. He was the most important teacher in my life. The second week of class he promised that we would publish a weekly newspaper, as soon as we were able to write stories.

Two years later Mr. Jahn wrote:

About five months later, we were able to publish the first issue of the Class Newspaper, which I immodestly believe is the first school paper written, typed, and duplicated by [Danish] kids in the first grade...By putting the greatest emphasis on Teaching Independence, the children have now in the middle of the third grade reached the point where they produce the paper completely on their own.

Here are a few stories from the class newspaper (dates are shown in the American abbreviated style—month/day/year):

- I destroyed the class newspaper, for I forgot to remove the pencil [from inside the stencil]. So Mr. Jahn had to retype the whole paper. (Per Just Sørensen, 1st grade, 6/12/1946)
- On Mondays we give talks, and on Fridays we also give talks. We also watch a movie about how an engine makes a car drive, and then Mr. Jahn asks for questions, and then one of us asked how one makes a cow glare! (Eskild Sørensen, 2nd grade, 1/20/1947)
- Nearly every day, Per Brinch is late. And I really believe he would like a chauffeur to drive him to school, And he also has an electric alarmclock, and every day when he has to go to school, a wire is loose or a tooth wheel is broken, and then he is full of stories and always has a letter about the alarmclock, the wires, and his parents ... In the morning when the alarm clock rings very softly, he wakes up, and then he is too lazy to get up. (Peter, 2nd grade, 4/12/1947)
- Yesterday we heard a talk in the basement and there were even slides shown. And Per Brinch stood and pointed at tunnel elements all the way across the river so the cars can drive underwater. (Erik Michaelsen, 3rd grade, 1/8/1948)

- On Easter Monday, I sat down at my uncle's desk to write a letter to my father and mother. Then two days later I come back to the desk, and the letter is still there (because there was no stamp on it). The day before I went home I go back in there, and it was still lying there. So I threw it in the wastepaper basket. (Per Brinch, 4th grade, 1949)

In the fourth grade each of us had to write a report on how a newspaper is produced, from the moment a journalist writes a story until the printed newspaper is distributed. After visiting the newspaper *Berlingske Tidende*, we read about *The Topic* (as Jahn called it), and cut pictures out of old newspapers. The class newspaper shows that we spent 14 hours on this project per week. I won the first prize of two kroner (roughly, a quarter) for my final report of 60 handwritten pages with 50 illustrations. Thanks to Mr. Jahn, I had written my first substantial report when I was eleven years old.

I found a copy of our class newspaper dated November 13, 1949 (which happened to be my eleventh birthday). The paper summarizes the opening meeting of our *classroom parliament*. Listen to this conversation among eleven year old boys:

- The teacher: I suggest that you elect a class council with three members who will be responsible for keeping silence and order in the classroom.
- Peter was elected as chair with 15 votes against Preben Møller 3, ...
Per Brinch 1 [guess who voted for me], Klaus 1.
- Flemming: Suggests a council with six people.
- Eskild: Flemming's proposal is the best, because six people can get more ideas than three.
- Peter: Suggests that a new council is elected every day, so that we may get rid of it, if we are dissatisfied.
- Gunnar Bjerge: I propose that the council is elected for one week at a time, because otherwise we will waste too many hours.
- Kjeld: I suggest that the most intelligent should be the six members of the council.

- Per Stockholm: I think it's nuts that it's always the most clever ones who are elected for something.
- Erik N: Yes, I would like, on behalf of the class, to welcome everybody!
- Teacher: I am pleased that somebody remembers to welcome us!

We soon learned to appreciate the advantages of a democratic society. A proposal to turn the three strongest boys into a “police force” was promptly and soundly defeated. In fact we only agreed on two rather mild, but very effective penalties: being asked to stand in the corner of the gym, and being excluded from interesting lessons and meetings.

The council wanted a written declaration from Mr. Jahn regarding its authority. So he wrote:

I hereby hand over my authority *within* the four walls of the classroom to the new class council. This authority applies to the laws of the class and regulations concerning discipline, what is to be taught etc., but excludes everything concerning the disciplinary rules of the school.

November 11, 1949. Signed K. Jahn

The teacher's private thoughts: “During the lunch break the council chair asked me to tell the class to keep quiet, so that we could eat in peace. But it's evident that the children have understood that I have handed over my authority to the council, because they are noisy, like steam pouring out of a container that has kept it bottled up!”

So it went for days. Some of us said pure nonsense, and, for many, many days in the beginning we decided to paint the whole day long. But Mr. Jahn insisted that a painting started one day should be finished before you began another painting. If you know how impatient children are, you will understand why, after some time, we asked to have lessons in writing and arithmetic as well.

Out of this experiment came something schools and colleges rarely teach: We gained faith in our ability to take responsibility and make decisions. I owe much of my ability to work independently to my early school years with Mr. Jahn.

When I graduated in the fifth grade, he wrote the following evaluation of me:

In the elementary school, Per Brinch Hansen has shown unusual potential. His diligence has to some extent depended on his interest in the subject matter, but when the interest was there, his achievements were exceptional (The Topic; Helping with the school play). His written works have often been characterized by a restless, artistic untidiness, but can be well written. Behavior: Always extremely good. Independent and helpful.

Since Mr. Jahn was decades ahead of his time, his revolutionary ideas were often met with skepticism from other teachers and criticism from parents, whose children probably would not have done better under another teacher.

However, my father recognized genius when he saw it. When my little sister Eva graduated from Konrad Jahn's class, my father and I bicycled one evening through the dark streets of Copenhagen, visiting the homes of her class mates, asking the parents for donations for a farewell present. On the last day of class, my father made a short speech in front of the class and gave Mr. Jahn a handsome leather briefcase. It was a very emotional occasion.

In 1985, I dedicated my book *On Pascal Compilers* “To my teacher Konrad Jahn.”

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In 1950, at the age of twelve, I was accepted by St. Jørgens Gymnasium, an elite high school on Filippavej in Frederiksberg. For the next seven years I obtained a thorough grounding in Languages (Danish, Swedish, English, German, French, and Latin), History (Ancient, Medieval, and Modern), Science (Physics, Astronomy, Chemistry, Geography, and Natural History), and Mathematics (Algebra, Geometry, and Precalculus).

This was my first encounter with traditional education. Although my teachers did not strike me as visionary, they were highly educated, and some of them had written textbooks in their fields. Several of them are included in the 1959 edition of *Kraks Blå Bog* (“Who's Who in Denmark”): Frode Andersen (Physics), Morten Borup (Literature), Peter Ilsøe (History), Aage Kampp (Geography), Jan Neiendam (History), and Just Rahbek (Literature).

The headmaster, Peter Ilsøe, visited every class room four times a year. He would ask each of us to come forward and receive our grade report, after announcing our class standing to everyone. I remember him as a jovial man

in his early sixties. But he was apparently not well liked by the faculty. One teacher turned his back to the headmaster whenever he entered the class room and stood by the window until he left again.

Mr. Ilsøe was an interesting teacher of classic Greek history. From time to time, he would sing short verses he had written about historical events. This was a very effective teaching method. Fifty years later, I still remember one of them:

Fire hundrede firti ni	(In four hundred and forty nine)
Perserkrigen er forbi.	(the Persian war ends.)
Perikles for styret står	(Pericles runs the government)
i Athen i tyve år.	(in Athens for twenty years.)

My favorite history teacher was Jan Neiendam. He rarely asked questions about our daily assignments. Instead, he told fascinating stories about historical figures. I remember one about the mad Danish king, Christian 7 (1766–1808), walking drunk through the streets of Copenhagen after a visit to a woman known as “Bootie-Cathrine.” At night, the king walked around town with her and a group of young officers, picking fights with night watchmen and beating up girls in whorehouses.

A grey-haired woman, Edith Hintz, taught geography and handwriting. It was not her fault that my handwriting remains illegible to this day. She taught me a lesson I still remember. Out of boredom, I would sometimes use my key to drill a small hole in a tree in the schoolyard. When sap started oozing out of the hole, a biology teacher inspected the tree and declared that it was doomed. Miss Hintz sentenced me to write one hundred times:

Drilling holes in trees is vandalism!
Drilling holes in trees is vandalism!

...

The last time I saw the tree, it was still alive and doing well. So much for expert opinion.

Our math and science teacher, Knud Steenberg Sørensen was a very nervous man. You could not help getting nervous yourself when he quizzed you in front of the class. If you made a mistake, he would break down crying and shout: “You are not only getting a zero—you are getting a double-zero!”

On the last day of class before Christmas, he tried to entertain us. One year, he asked a student to imagine an object, which he called a “half-moon triangle.” At that age, we were not trained to reason about the abstract

properties of non-existing objects. And sure enough, pretty soon, the student and Mr. Steenberg Sørensen were both crying, and the Christmas entertainment turned into harassment. Fortunately, we were saved when the school bell rang. But that was not the end of it. When classes resumed after New Year, the teacher called upon the same kid and continued the mental torture for another hour.

One of my English teachers (who shall remain nameless) was a sadist. There is no other way of describing him. In the school yard, one of the boys had shouted his first name loudly behind his back. During our next English lesson, the teacher asked the boy, again and again: “Who gives you the right to call me by first name?” No matter what the kid said, the teacher slapped him hard. This went on for a long time, while the victim cried and the rest of us watched in horror.

In his novel *The Neglected Spring*, the Danish author Hans Scherfig (1940) describes such a teacher:

And the teacher is an educated man. He has scientific interests. He has written a fine dictionary and many editions of excellent textbooks. He has traveled abroad and has acquired culture and fine manners.

And the well-informed teacher has assumed responsibility for hitting those who are late. Perhaps his job could have been performed by a man with less scientific education. But it could not have been performed more conscientiously.

Most of our teachers were, however, decent human beings.

Students who were late in the morning were met at the entrance to the school by an elderly gentleman, senior master Just Rahbek. He would write your name in his note book and sentence you to arrive fifteen minutes *early* for the next three days. To me he looked like an eternal bachelor. I was surprised recently to discover a romantic side to his life: When he was 55 years old, he married a Croatian woman, Alexandrine Sisacki, from the town of Sisak.

As a teenager, I had a chemical laboratory in a corner of my mother’s tiny kitchen. After school I would go downtown to Struer’s Chemical Laboratory and buy small amounts of chemicals for experiments.

Once I tied a thread around a piece of sodium and lowered it slowly into mercury. This produced a small explosion with yellow flames. “Run

mother!" I shouted. In the evening she complained to my father. But, in this case, he was on my side.

My father had an odd collection of old chemistry books, including an 1855 edition of *Die Schule der Chemie oder Erster Unterricht in der Chemie versinnlicht durch einfache Experimente* by Professor Julius Adolph Stöckhardt. It was printed in German Gothic type and was not an easy book for a beginner.

Fortunately, my classmate Peter Schoubye had a copy of Paul Bergsøe's wonderful book *Kemi på en anden måde* ("Chemistry in a different way").

On a snowy afternoon, I walked home from Peter's apartment carrying a testtube with a liquid we had produced. I wasn't sure what it was I was carrying. It was quite hot to touch and, from time to time, the stuff would bubble up and threaten to overflow the testtube. So I would place it in a snowdrift and wait for a few minutes, to let it cool down. The next day I found out it was an extremely toxic substance.

When boys experiment with chemistry, the temptation to make gunpowder is irresistible. My father lost his hair when the gunpowder he was making exploded in his face. His sister remembered him entering their kitchen, moaning quietly and putting his blackened head under the water faucet.

My cousin, Ole Bak, also made gunpowder, the usual way, by mixing sulphur, charcoal, and potassium nitrate. Since nitrate absorbs vapor from the air, gunpowder must be dried before it can be used. Ole got the bright idea of drying gunpowder in his mother's baking oven. It burned furiously, emitting noxious, poisonous gasses that forced his parents to leave the kitchen quickly and retreat to the other end of their house for several hours.

One day, Peter Schoubye's mother called me on the phone and told me that he had blown off one of his fingers and was in the emergency room. If I still had any of Peter's gunpowder, would I please throw it away. I did, and that was the last time I experimented with explosives.

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After graduating from junior high school in the ninth grade, I was admitted to senior high in 1954. This was the first time I went to school with girls. I spent many pleasant afternoons with my friends, Sven Gundel, Ann Harsen, Sven Husum, Leif Christensen, Hanne Andersen, Bent Vang Olsen, and Jørgen Albertsen. We drank tea and talked about dating, school, movies, and books (but rarely politics).

Sven Gundel had a weird sense of humor. Although we were not very good at it, we enjoyed playing tennis. On one occasion, without telling me, he had invited the whole class to watch us play. After a while, he asked me: “Why don’t you play against Birgit?” So I did. Not only did she return every shot—she hit the ball so hard I ended up playing with my back against the fence. I had forgotten that Birgit Jensen had won a junior championship in women’s tennis. Everybody but me thought this was very funny.

Sven’s father, Leif Gundel, was the editor-in-chief of the Danish communist newspaper *Land og Folk* (“The nation and the people”). When we graduated from high school, Sven gave me a copy of the official history of the Russian communist party. I thanked him and asked wryly: “Don’t you think I should wait for the next revised edition?”

Sven Husum and I spent countless hours playing jazz records. Listening to jazz has remained an important part of my life during the long hours when I study or write.

I owe my love of jazz to my uncle, Børge Ring, a well-known Danish bass player. As a teenager, I visited Børge and his wife Nanny in Amsterdam, where he still works as a cartoon animator. In a record store we listened to a long-playing record with pianist Oscar Peterson and bassist Ray Brown. I didn’t really understand why my uncle liked it. But I admired him so much that I spent all my pocket money on that record. The appreciation came later, when I had played it numerous times at home.

In high school I also learned to appreciate literature. (As Groucho Marx said: “Outside of a dog, a book is man’s best friend. Inside of a dog, it’s too dark to read.”) From my friend, Jørgen Albertsen, I borrowed Henry Miller’s novel *The Tropic of Capricorn*. When our teacher, Morten Borup, mentioned that Jacob Paludan’s Danish novel, *Jørgen Stein*, was the “bible” of his generation, I held up Miller’s novel in class and said: “This is our bible.” The old man smiled, so he must have read it too.

I read more widely than at any other time in my life. When I graduated from high school, I had, of course, read the classic works in Danish literature—our teachers saw to that.

On my own, I read a fair amount of English and American literature (in English): most of Graham Greene, Ernest Hemingway, and John Steinbeck. One summer evening, I was reading Steinbeck’s *East of Eden*, when three girls came to our summer cottage and asked me to join them at a local dance. Well, I was so absorbed by the novel that I declined the invitation. You may think I made the wrong choice. Maybe. I don’t remember who these girls

were. But I still remember Steinbeck's gripping story.

I read Danish translations of Norwegian, Swedish, German, French, and Italian novels; and, of course, the great Russian novels: Leo Tolstoy's *Anna Karenina* and Fyodor Dostoevsky's *The Brothers Karamazov* (Time Magazine once wrote: "These brothers need a keeper!"). You get the idea: I read all the time.

James Joyce's *Ulysses* was a challenge I could not resist. This 700-page novel describes a day in the life of an advertising agent, Leopold Bloom, as he wanders through the streets of Dublin as a modern Ulysses. It is regarded as one of the most difficult works of fiction, embedded, as it is, in multiple layers of meaning. Every chapter not only mirrors an episode in Homer's epic poem—it also centers around a place, a human organ, a science, a color, and so on. Chapter 14, for example, corresponds to the episode of The Oxen of the Sun—an ancient symbol of fertility. The place is a hospital, the organ is the womb, the science is medicine, and the color is white. The chapter traces the nine months of a pregnancy and, in parallel, the historical development of the English language. The opening of the chapter is written in the earliest English prose. When the child is born, Joyce switches to modern English.

Joyce plays dirty tricks with the reader. Early in the novel, Leopold Bloom is leaving his home: "On the doorstep he felt his hip pocket for the latchkey. Not there. In the trousers I left off. Must get it. Potato I have." The allusion to the potato becomes clear only 400 pages later: "Spud again the rheumatiz? All poppycock, you'll scuse me saying."

As an eighteen year old I decided to climb this intellectual mountain. Every Saturday, I spent the whole night reading one chapter of *Ulysses*, writing down notes and questions. A week later, I read the same chapter again. It took me six months to finish the novel this way.

In my final year of high school, I passed an exam, where we had six hours to write an essay. I wrote about *Ulysses* from memory. A leading newspaper published the essays of all students who got As. Since I got an A–, my essay was not published.

Today I think Joyce misunderstood the essence of creativity. A written work should not be a labyrinth. The genius of Isaac Newton was not to make physics incomprehensible. On the contrary, his unique contribution was to make it possible for others to understand what only he could describe concisely.

I admit there is room for disagreement here. People still gather in a Syracuse café on "Bloom's day" (June 16) and take turns reading the last

chapter of Ulysses. But I have lost my taste for difficult writing.

In June 1957, I graduated with honors from St. Jørgens Gymnasium. I was now a broadly educated student of the arts and sciences, who had learned to read widely and write well. It was time to choose a more narrow path towards a professional career.

