

From 0 to 100: how did Herwig get there?



Herwig's well-kept secrets for longevity

- Genes matter
- «lifestyle» : no smoking, very little alcohol, Austrian diet
- Always physically active
- Fulfilled personal life
- Amazing social capital
- A passion for physics and for music



... causal relationship between all these factors and life expectancy now well proven by health research

... and in addition, **CURIOSITY**

Where it all started – Landskron in 1924

Very protected childhood in a quaint and peaceful little town in Bohemia

German-speaking island in Czechoslovakia – multicultural environment

Europe was a very different place from now...



Franz Schopper



Back to his roots in 2010...



Always seize opportunities and make the best of it! (and never complain about obstacles)

- Parents divorce when Herwig is 6 years old: now he has two sets of loving parents, no competition and more diversity «*I was completely spoiled!*»
- A wonderful Jewish English teacher: learns to speak and not only read Shakespeare; saves him later
- 1941 leaves him as one of two students in his class: happy to have all the teachers' attention and achieve his «maturity»

Love for Music

(from Mozart to Wagner...)

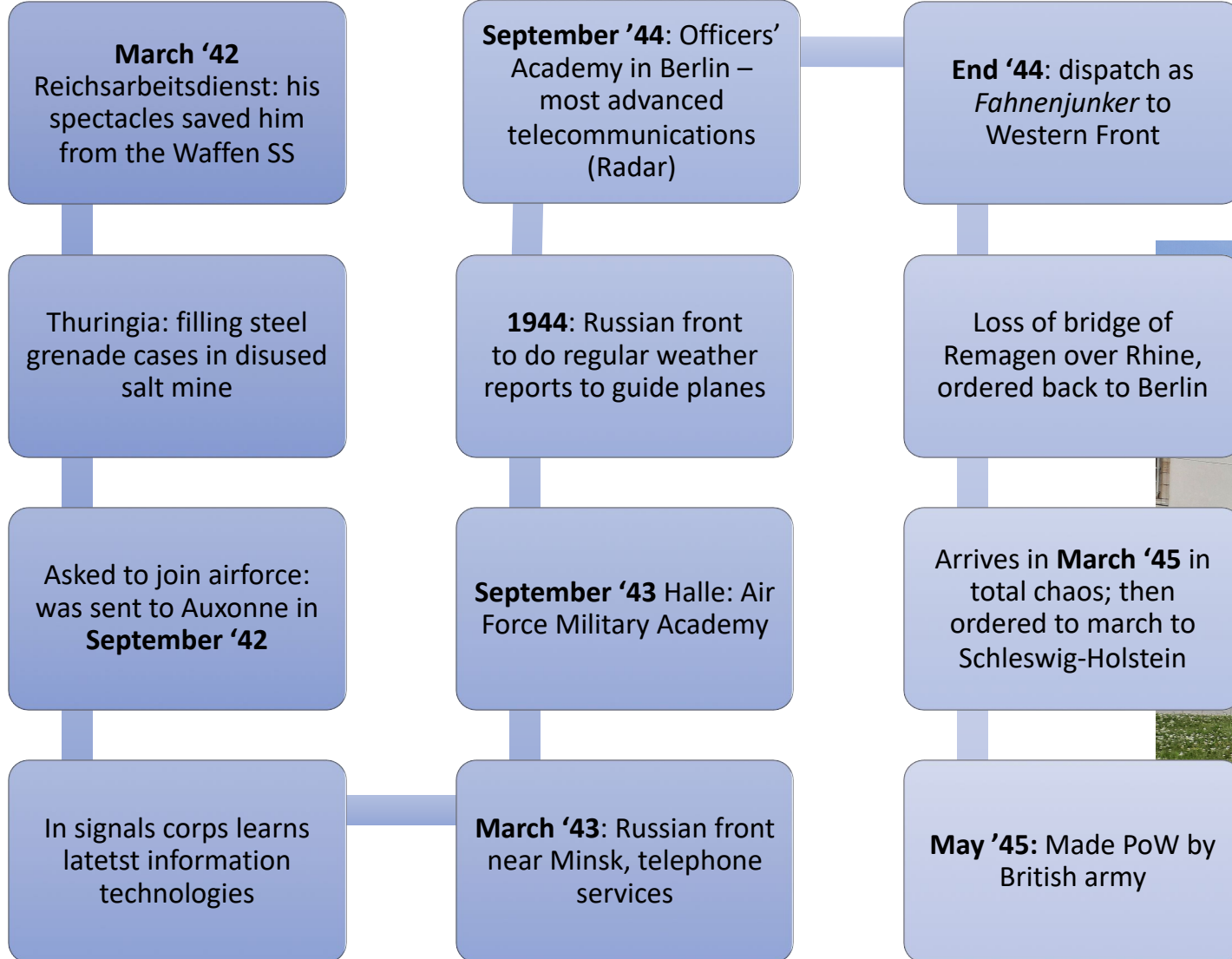
- His stepmother teaches him the piano
- But piano in an orchestra? Learns to play double bass
- ASAP get a piano after the war
- Plays all his life
- Eager concert and opera listener

An early calling to natural sciences and in particular physics turns into the passion of his life

- No scientist among close family
- Gymnasium in Landskron focused on science; great teachers in maths, chemistry and physics
- Interested by technology + wants to travel
→ will become an engineer on a ship
- Listening to physicists in small hotel of his maternal grandfather in Laurana, he is so fascinated that he decides to become a physicist

“After swimming in the Adriatic, I would listen to them. One day they would be talking about how butterflies can fly, the next evening they would be looking at the sky and discussing why the stars are burning, where they get their energy from and things like that. I was so impressed that they could discuss completely different phenomena based on just a few basic principles. I didn't yet understand those principles, but I did understand that this was the basis of physics.”

The war years : March 1942 til May 1945



How the war years shaped Herwig's future life

- While on the Russian front, studied physics at Technical University of Prague
- Used any opportunity to learn about «modern» information technologies (telephony, morse, radar)
- At age 20 responsible for a group of soldiers much older than him
- Nothing left at the end of the war except his small *Rucksack*
- Very lucky to be captured by British army
- Had never seen a British person before ... and was recruited as an interpreter
- British officer took him to Hamburg where a new period of his life started
- No news of his parents. Never saw his father again. Could find his mother through Italian postal service.

«I have been very lucky: I never had to shoot at anybody during the war.»

A detour to Schloss Sanssouci before moving West...

- In April 1945 British bomb Berlin every night at 10pm
- Wants to see Schloss Sanssouci before leaving Berlin: « I may never have this opportunity again! »
- Tells his driver to make the detour, arriving just before 10pm
- Sees the beauty of the historic castle of Frederik the Great illuminated by the «Christmas trees»



The years in Hamburg: 1945 to 1953

(aged 21 to 29)

- **Only 9 out of 100 years, but decisive for the entire life !**

“My years in Hamburg were important not only for the development of my career in physics, but also for personal reasons. When I look back on that time now, I’m struck by how lucky I was, and how easily my career could have taken a completely different turn.”

1945:

- Arriving in Hamburg, first looking for a stay in destroyed city
- Address from fellow prisoner ;-)
- HH-Farmsen: Frau Palm...

Herwig in his first civilian suit after the war, taken in the late 1940s in Hamburg. (Herwig Schopper’s personal collection).

Studies at Hamburg

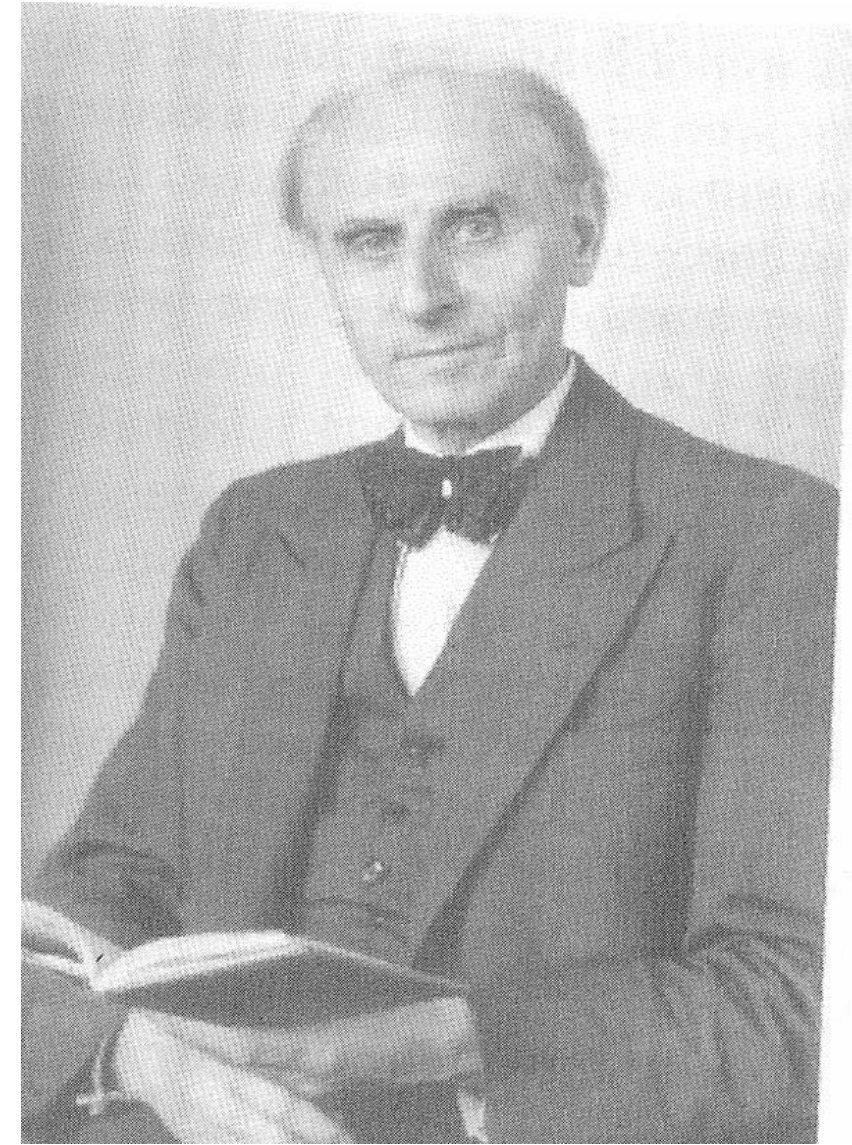
September 1945: Start of studies in Hamburg

(while working as an interpreter for the British Military Government)

- Lectures and tutorials with Wilhelm Lenz (who was assistant to Arnold Sommerfeld) and with Lenz's assistant Wolfgang Pauli
- Strong influence by arrival of Robert Fleischmann with interest in both, nuclear physics and solid state physics
- Fleischmann soon became a role model as someone whose curiosity was not limited to a single branch of physics

About Robert Fleischmann:

“He'd acquired and retained a wide understanding, and this impressed me very much. I tried to follow his example all my life — it's really the unity of physics that makes it beautiful.”



One of Herwig's first teachers, Wilhelm Lenz. *“I learned 80% of the physics I know from him,”* recalled Herwig. *“A great physicist who is too little known today.”* (Herwig Schopper's personal collection).

The Pre-Diploma

Fall 1947: Pre-diploma

- Came to attention of Rudolf Fleischmann
- Part time assistant → could give up job at Military Government
- Preparing experiments for students and practical classes

“It was really revolutionary. The emphasis was given to the possibility to demonstrate experiments and not restrict physics teaching to explanations in chalk on the blackboard. I became responsible for the demonstration of experiments. I spent many evenings trying to get a demonstration to work for a lecture the next morning.”



Herwig as a student at the University of Hamburg in around 1948
(Herwig Schopper's personal collection).

The Diploma

Optical bench:

At Hamburg University after the war, equipment had to be improvised. Herwig's optical bench consisted of a gravestone bought from a nearby bombed churchyard, supported by tennis balls. (Herwig Schopper's personal collection)

March 1949: Diploma in optics

- Investigated the optical properties of thin alkali metal layers as a function of their thickness
- Need of an optical bench...

*"All the work for my Diploma thesis and later for my PhD was done on **gravestones**."*

The Family

March 1949: Marriage

- Meeting a young German lady Ingeborg Stieler at the Military Government (married March 1949)
- Married once conditions apply:
 - ✓ “have a real job, to support a family”
 - ✓ “seek agreement by the father of future wife”
- Total commitment to support her husband throughout his professional life and to be head of the family:
 - ✓ Decisive for the success of his career !
 - ✓ E.g. staying in Hamburg while he leaves one year to Stockholm
 - ✓ Accompaniment at all future stages of his professional life (as of 1954 & 1959 with children)

*“In Hamburg I met my wife Ingeborg, with whom I shared the **happiest 60 years of my life.**”*

Personal note on own experience:

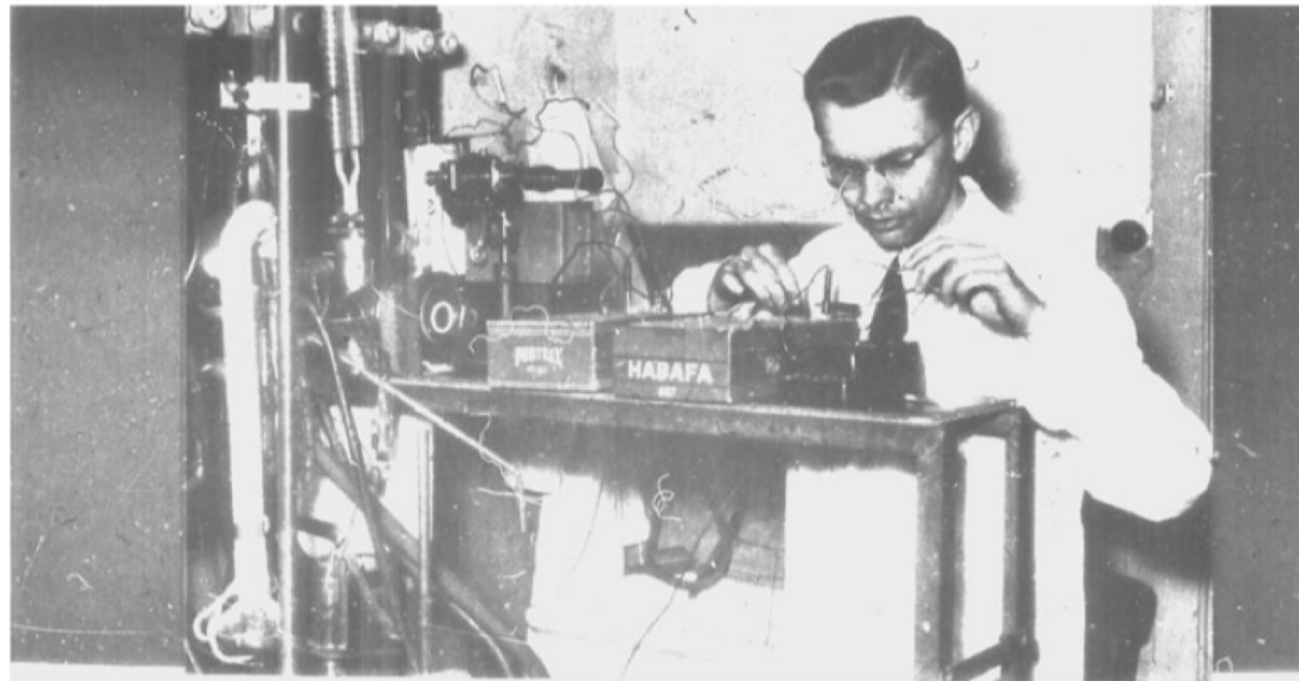
Some difficult times (e.g. 7 changes of school, mobbing...) but altogether extremely enriching experience (different cultures, international environment, languages, ...)



Herwig and Ingeborg's wedding photo, taken in Hamburg on 14 March 1949 (Herwig Schopper's personal collection).

The Thesis

Herwig working on his polarised proton source in Hamburg in the early to mid 1950s (Herwig Schopper's personal collection).



April 1951: PhD

- Full time assistant to Robert Fleischmann
- *“The anomalous optical behaviour of thin alkali metal layers does not require a new phase of the metal”* (as claimed by the Robert Pohl school)
- Left to Stockholm for one year in 1949 to Lise Meitner → study of beta-decay
- Alongside his doctoral work: building a proton source with the aim of producing polarised protons (important later on)
- *Met many of the leading figures of twentieth century physics: Max Born, Werner Heisenberg, Robert Pohl, Arnold Sommerfeld, Pascual Jordan...*

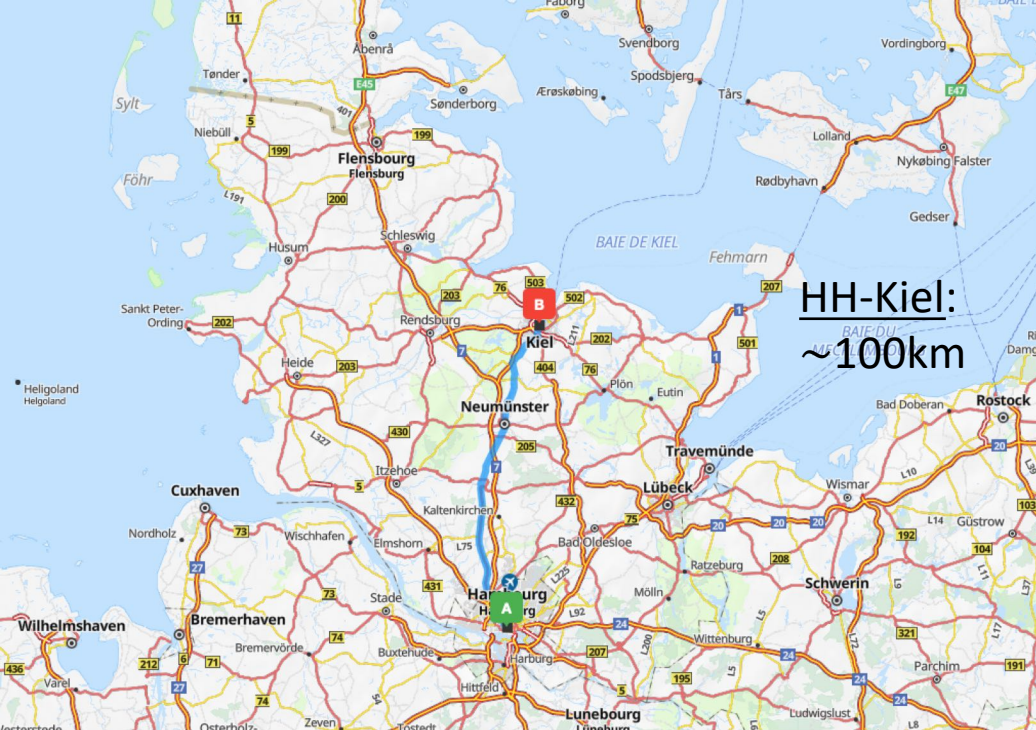
“In order to embarrass me, Harteck asked a question that I could not answer. It was only after giving me an excellent grade that he confessed that the answer was only to be found in a paper of his, soon to be published.”

← PhD examiner: Paul Harteck
(inventor of separating uranium isotopes using centrifuges)

➤ 1953: leaving Hamburg to accept a post offer by Robert Fleischmann in Erlangen

A last anecdote

A stroke of fate that was to determine his future life...



Trying to escape from Germany towards Italy:

- Displaced person, no idea of where his family lived
- Postal service between Germany and Italy was re-established
- First contact to his aunt in Italy
- Uncle is captain on cargo ship
- Offer to get Herwig on his boat at Kiel as “blind passenger”...

“Since life in Hamburg at that time was still extremely precarious and difficult, with little food and little hope of making a living, and since I faced an uncertain future in Germany, I considered this offer very seriously and I agreed to go.”

➤ Fog! Waiting for the ship to arrive...

“So, I decided to give up this fantastic possibility, and go back to my life in Hamburg, whatever it may hold. Imagine what would have happened if there had been no fog! My life would have probably taken a completely different direction. So sometimes life is determined by chance, and there is little we can do about it. With hindsight, I’m very glad for those days of fog.”