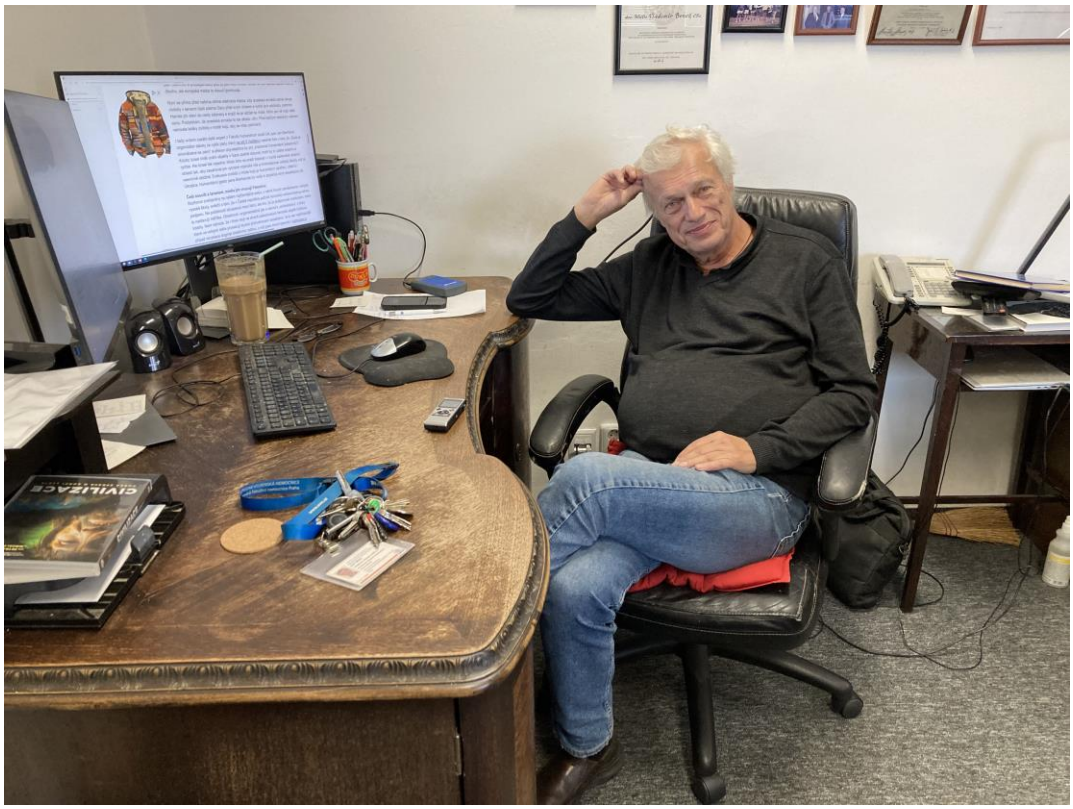
Man Is Supposed To Have Fun. That's Why He's on Earth



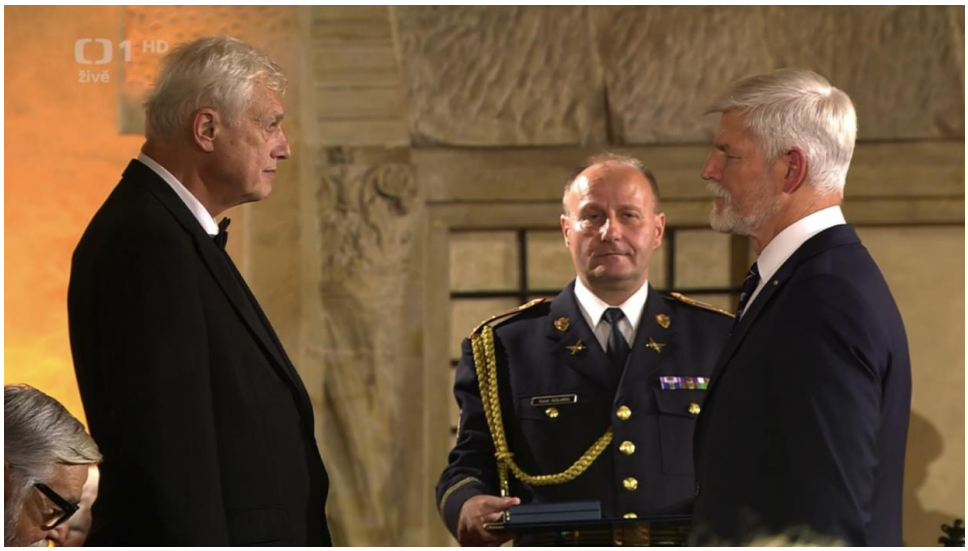
Prof. MUDr. Vladimír Beneš, DrSc.
Chairman of the Institute of Clinical Neurodisciplines, Emeritus Chairman of the Department of Neurosurgery and Neurooncology First Faculty of Medicine Charles University and Military University Hospital Prague

Professor Vladimír Beneš is a Renaissance man through and through. Above all else, he is one of top 100 neurosurgeons in the world. In addition, he is a tireless promoter of neurosurgery and co-author of the Czech bestseller My Journeys Into the Depths of the Brain, where he presents himself as a great storyteller with a great sense of humor. He is also an avid entomologist with over 30,000 beetles in his collection (mostly ground beetles) which he goes on monthly expeditions for all over the world.

His crede is that you have to enjoy life: "The most important human quality is honesty and loyalty. But in reality, what you absolutely need is humor and creativity. Once this is gone, your existence is doubtful, sad, and boring. Man was meant to have fun. That's why he's here."

Faithful to this philosophy of life, in his youth, he used to describe plans for operations either as a sports match (home vs. away) or as a theater program: "The main hero, logically, was me as the surgeon. The main villain was the anesthesiologist. The director, that was me again. The patient was "an act...".

Given Professor Beneš's playful approach to life, it is unsurprising that one of his patients was a man with the last name DEATH who lived in the village of GRAVE.



On the national holiday of the Czech Republic, October 28, 2023, President Petr Pavel awarded Professor Vladimír Beneš with the Medal of the 1st Degree for services to the state in the field of science

Vladimír Beneš's philosophy of life also fits well with his relationship with money:
"I've never seen my pay slip. I have no idea how much I earn. I have a wife for that, but she probably doesn't have much of an idea either. It doesn't matter... Medicine doesn't make a lot here, but it's a reliable living. It accumulates, so I don't have to worry about it. I don't even have a lot of expenses. My biggest expenses are plane tickets and a car rental when on my beetle trips.
Money is not the goal; money is an instrument. A person must take care of himself and his family so that he does not have to change his routine and rhythm when he retires. So that he can still afford it. Nothing else. I can eat one lunch, sit on one plane, drive one car - I never drive two cars simultaneously.
To the west of our borders, doctors take the same in euros as I do in crowns. Not to mention the Americans - my American boss earned between two and three million dollars a year. But then when we all meet at the congress, we have the same coffee, go to the same lunch, and are dressed the same. So the amount of money someone has in the bank is not essential."

The mention of the wife is not accidental. Vladimír Beneš makes no secret of the fact that part of his professional success is due to his wife Eva, who has always solved all the issues of everyday family life: "My wife is great; it wouldn't be possible without her. I would be completely lost without her. She is extremely tolerant and understanding. I can do anything, but she has complete power over

me. Because she knows where the main water valve is to shut off, how to change the fuses, how to operate the TV remote, etc..."

Vladimír Beneš is - as he says - at the top of the food chain. He can afford to say he is the best neurosurgeon in the Czech Republic because everyone knows it. He values being a member of the World Academy of Neurological Surgery: "The Academy is not something you apply to; you have to be selected; it has to be approved by the rest of the members. We have four types of members. Junior Member - Senior Member - Honorary Member - Dead Member. I am a senior member now. These eighty people set the tone for world neurosurgery."

- What are you most proud of? -
"When I served as president of the European Association of Neurosurgical Societies for four years. That was the apex of my career. I highly regard the four years that I headed that up.
(It has therefore come full circle as Vladimír Beneš Sr. the founder of Czech Neurosurgery, organized a neurosurgical congress in Prague in 1971, when the European Association of Neurosurgical Societies was founded. - author's note)

- Does it all come so easy to you, or is there something you struggle with? -
"I don't struggle with anything. It took a lot of work and a lot of time, but if you enjoy it, it becomes a hobby in a way. And when you're engaged in something, well... that's not work - from this point of view, I can say that I have never worked a day in my life. If I enjoy it, I don't get tired of it. Burnout syndrome is an incomprehensible term for me. Even over-stress is incomprehensible - as stress and pressure are positively necessary for any development. Under pressure, one performs; under pressure, one invents something. If it weren't for stress, we'd still be washing our clothes in the stream."

"What Is the Difference Between a Neurosurgeon and God? God Doesn't Think He's a Neurosurgeon."

Vladimír Beneš is the embodiment of self-confidence and self-assurance. Both are a significant part of his profession. Both are very important to his patients, who need to know that the person sticking instruments into their brains (and in rare cases even fingers, as he says that the finger is the most delicate instrument) is 100% sure of what he is doing:
"For one thing, it's our character. Surgeons have big egos; there's no hiding that. One learns to use that certainty to our benefit. Under Communism, we were used to the state doing everything for us - it was paradise for irresponsible people. In the field of surgery, one must be able to make decisions; it cannot be done without it. I have to make decisions, but at the same time, I have to take responsibility. I've never had a problem with that, and it gives the appearance of self-confidence - of which I have plenty of."

- Are you allowed to make mistakes? -
"Of course. It is impossible not to make a mistake. However, you must not repeat it because then it is no longer a mistake but stupidity. Václav Hudeček and I are friends. He practices on his violin four hours a day – there is no way I am in the operating room four hours a day. In addition, he has twenty concerts a month. When he was three years old, and I was playing in sandboxes, he was already playing the violin. When I was fifteen, and I started going to the pub and meeting girls, he was already known to everyone in the country. When I cut a human for the first time at the age of

twenty-five, he was already a world-famous virtuoso. And what you learn in childhood is always better than what you learn in adulthood. And once we saw it like that, I went over it in my head, and then I said to him: "Václav, are you going to make a mistake?" He looked at me like I was crazy and said, "Of course." And I'm expected not to make a mistake? It's not possible."

- Even with the knowledge of possibly making a mistake - doesn't it constrict you quite a bit knowing tha nicking one blood vessel will cause paralysis over half the body? -
"It can't. If it constricts you, it weakens you. It simply cannot. It's not fear, but I have to have respect. You mustn't be too afraid, but you mustn't be fearless or without worries because then you start harming people. The operation must be routine but not boring - the adrenaline is still there because you enjoy it."

- But that's your adrenaline, not the patient's. -
"Exactly. It's all a matter of experience and quantity. In medicine, there is something called volume-dependent outcome. And it's logical - if you do something twice a week, you will do it much better than someone who does it once a year. Because then you know the force you can push that blood vessel with, which nerve you can dissect a lot or not at all. If you're there once a year, you don't learn that."

- Why is there only one woman in the World Academy of Neurosurgeons? -
"We naturally gravitate towards different things. Neurosurgery is done well by women up to a certain level. We have five female doctors on the ward; they are excellent and far more careful than male doctors. But then suddenly, as you progress in your career and get into more complicated and challenging things, women don't have the nerve for it. They don't want to do the high-risk operations - at least, I think so. They're not comfortable with it, so they don't choose it.
Considering neurosurgeons all over the world, there are a minimum of women. And virtually none are known for doing the cutting-edge, riskiest, and biggest things. But it's not that they can't handle it. It's because it doesn't suit them mentally. Women are excellent pediatricians and excellent plastic surgeons. If I were to do pediatrics, I'd go crazy. People choose what they enjoy, what suits them, and what satisfies them. And that's just not what neurosurgery is for women. From this point of view, there are not enough women asphalt workers and male seamstresses.
Women aren't typically fond of it when risk is concentrated in one particular moment. This is the caveman-like hunt in men when everything is concentrated on the moment of killing the animal. And during those times, the women were sitting by the fire, picking berries, and looking after the children."

- Is the passion for bugs also "caveman-like" for you? -
"It's probably because every guy has a certain amount of gatherer inside him. I always enjoyed nature, and my grandfather, a teacher, used to take me on long walks; I picked up a bug and that was it. I enjoy the variety and the extensive variation in size, shape and color. And this is living nature. ot stamps or beer coasters. I probably wouldn't be able to collect that.
The hunt has been the main thing for me for a long time. To go somewhere and forget about everything here and hunt bugs there. There must be some adrenaline in every operation, and of course, hunting is also adrenaline. I always feel satisfied when I complete an operation successfully or catch a nice bug. Even more so if I catch a new species."

The Name Vladimír Beneš as a Synonym of Czech Neurosurgery

The founder of Czech neurosurgery in 1949 was the father of Vladimír Beneš, also named Vladimír Beneš. Vladimír Beneš's son, also Vladimír Beneš, is the successor. Vladimír Beneš Sr. was born in 1921 and lived to be 100 years old. (He performed his last operation at the age of 88.) The family passion for neurosurgery combined with longevity (Vladimír Beneš's mother is currently 100 years old) has made the name Vladimír Beneš synonymous with Czech neurosurgery.

Vladimír Beneš saw the human brain for the first time when he was six years old. His dad was the deputy head of the clinic at the Central Military Hospital; the family lived opposite the hospital. His mom worked in the pharmacy as a pharmacist at the same hospital. Therefore, there was nothing strange about a first-grader going to the hospital to show his parents his school report. His dad was in the operating room at the time, so naturally his son went there. The patient was under local anesthesics with a hole in his head. The son showed his father a big "A", and the patient commented: "You have a smart son."

Vladimír Beneš was, therefore, somewhat predestined for neurosurgery. Although the moment when he decided on this particular field of medicine was as a fourth-year medical student when he viewed an operation in a hospital in Pilsen, which did not go well and ended with a cardiac massage - and that was the precise the moment when he decided on neurosurgery.

However, when asked if he has neurosurgery in his genes, his precise words were: "There are probably some genes, but I am not sure if the specific gene could be detected."

- How has neurosurgery changed since your father started? -
"It has changed dramatically. The first generation of neurosurgeons began to appear at the turn of the 19th and 20th centuries. Back then, they only assessed whether or not they survived. The patient left the hospital alive, meaning he was breathing and his heart was beating. It didn't matter if they transferred him to intensive care at the hospital next door, where they happened to have a free bed. He just left the hospital alive. That was the result.

And it was due to the fact we didn't have diagnostics in neurosurgery. The methods in those days only showed distant pressure. So, when something was pushed to the right, the tumor was on the left. It is said that CT and MRI have evolved at our request so that we can finally see what we are doing and what we're going to do. There were also Nobel prizes for both of those discoveries. (Godfrey N. Hounsfield + Allan M. Cormack, Paul C. Lauterbur + Sir Peter Mansfield)

The MRI shows us exactly what we're dealing with. I know in advance what I'm going to do and where it'll be. What kind of structures will be there, what to avoid, and how, so I can think about it in advance. They couldn't do that back then. They opened up the dura mater and just had a look. I experienced that early on in my career, and it was really adventurous.

The mental change is that the first generation of neurosurgeons simply responded and had to have the mentality of a fighter pilot. There's a problem, so I have to solve it regardless of collateral damage. In addition, they received patients in much worse conditions because something must have already been wrong with those people. Today, healthy people come to us who hit their head on roller skates. They had a CT scan, and they're here - they haven't got any problems, but there's something there in their head.

So, the real change is that we are proactive. We no longer react but impede. And since the nervous system does not regenerate, it is actually prevention. I operate on an aneurysm to prevent it from rupturing. I remove the tumor so it doesn't cripple the person. I operate on a narrowing carotid artery to prevent a stroke. And all of a sudden, we're not only evaluating survival but also quality of life.

The ideal is to return a person to the environment, family, and activities they had before. That's a good outcome. To not harm people but to offer them the safest possible treatment. That's what modern neurosurgery is all about - risk reduction.

How to meet the patient's expectations is another matter. An aneurysm ruptures, blood spills around the brain, and massive headaches accompany this. But we can't solve it. We will make a hole in his head and close the aneurysm, but until the blood dissolves, he's gonna have a headache. So we didn't meet his expectations, and we had to explain that to him.

At the turn of the millennium, radiosurgery and endovascular treatment appeared - so there is a specific competition between those modalities, and surgery has to be better than these alternative methods. This led to tremendous technical development in the field.

The surgical peak was in the nineties. We'd seen it all, and there was no alternative. Those were the fighter pilots. Then alternatives suddenly appeared, and the mentality changed from fighter pilot to airline pilot. Something screeches – drops the plane to the ground."

- Can neuroprostheses be expected to help patients with a severed spinal cord in the future? -
"This has been tried for many years. It will happen one day, but the question is when and to what extent. But it certainly has far more chance than stem cells or neurotransplantation. Some of the protocols that are running now are fascinating. A friend from Alicante has been giving blind people glasses with a camera sending 500 electrodes onto their visual cortex - and his last patient was able to read from a computer screen and orient himself in space. It's fascinating.

Today, we can monitor almost every nerve cell - electrodes are inserted, the person learns something, and the connected computer also learns it. One man who was shot in the neck in a gang war in Los Angeles can move his artificial arm. In practice, these are all research protocols of huge teams so far, but it's only a matter of time before it really starts to work."

- Isn't neurosurgery already touching on ethics? -
"It's an evolution. A neuroprosthesis replaces a lost function, but it can also be one that either gives you a new function or supports the one you already have. So a factory owner says he wants ten rocket scientists tomorrow - so you can take ten goat herders, put a chip in their heads, and deliver ten rocket scientists the next day.

No one can stop such research. It is impossible to administratively say that you will no longer research this. So, it will be a big ethical problem in the future. I always called it Homo technologicus. Harari has an even better term for it: Homo Deus. And that's a completely different creature; it's not us anymore. It's the possibility that humanity will become extinct. Huxley and his End of Civilization. Who would like to be a "gama" and sweep the yard? Everyone will want to be an "alpha".

- Where is the ethical boundary of a superman - a rocket scientist created from a sheep herder? And where is the ethical line of genetic engineering? -
"That's another danger. For now, the knowledge is just accumulating, but one day, it will have practical use, as it already is in agriculture. Then there could be a big problem. For example, for designer babies, the mother will want a blonde girl with an IQ of 180. All right, pay up, and you'll have her. The outlook on umanity doesn't look good. Not at all."

- Are you skeptical about artificial intelligence? -
"Very. That's not intelligence, after all. I expect individuality, emotions, and creativity from intelligence; the machine can't have that. It's just a set of procedures. I was lecturing somewhere and I met a person who deals with artificial intelligence. And I asked him to give the AI two terms: brain and Dali. It spat out four images in a few seconds. Three were Dalí, but the entire background of the fourth was Giorgio de Chirico; Dali would never have painted that. Then, my colleague and I entered the terms: a triptych, Bosch, brain. The result is Bosch, but it's not Bosch.

So, AI isn't that brilliant. But it eliminates many professions. Writers, musicians, journalists - they should be afraid. And robots all over the blue-collar professions. You enter into AI: "Annie tied her shoelaces by Honoré de Balzac," and it spits out a five-hundred-page novel, and you feel like you're really reading Balzac.

There is something called "Paper Mills". When someone wants a Ph.D. or a professorship, they have to publish something. And he orders articles from those fraudsters, and the artificial intelligence writes him six professional articles, where there is a set of patients, results, and everything as it should be, with everything. It's completely made up; he sends it to major professional journals - and you have no chance of knowing. That's ridiculous...
I am a member of the editorial boards of one European and one American journal, and you only know it when more than one of them comes in simultaneously. But we don't know how many such articles have already been published. And yet it's all made up from A to Z."

The Brain Is Human. Death Equals the Death of the Brain

Professor Beneš knows that the human is the brain. That's why a brain transplant for him sometime in the distant future is total nonsense - because it wouldn't be a brain transplant, but a body transplant. The brain would be the recipient, not the giver: "In this, the hierarchy is so absolute that there is no discussion necessary."

He says openly that the heart is just a "thump- thump- stupid muscle", and in a more polished form, he calls it an ordinary muscle pump, which has only one task - to deliver glucose and oxygen to the brain: "The heart is a muscle that is controlled by the brain, like everything else. It beats all its life, and towards the end of its life, it invents some arrhythmia or another problem to draw attention to itself. Medically, it's simple because when everything fails, they replace it. Something like that doesn't work with the brain at all."

Vladimír Beneš is talkative, extroverted, and media-savvy, which has helped him in promoting the brain since the beginning of his career: "I decided that neurosurgery should have the same prestige as cardiac surgery. It's just that the heart has that emotional charge in it, and those emotions can't

be suppressed. So, I've vowed that I would not turn down a single possibility or opportunity to popularize the brain and bring the field of medicine to the same level of awareness as heart surgery, even if it's impossible.

Globally, seven times more money goes into heart research than into brain research. However, worldwide there are seven times more publications with the prefix neuro- than cardio-."

- Isn't it because everyone has a heart, while only some people need a head? -
"Even Joe Schmo from the middle of nowhere has a brain - but he doesn't know how to use it."

- Does the brain like to laugh? -
"Definitely, because it releases endorphins, and it gives pleasure to it. The brain is basic, and the body needs it to function. Even an ordinary heart will give it 20% of the blood."

- You say that the brain "has" legs to carry him where he needs to go, eyes to see where he is going. So, what is a person? -
"Of course it's the completeness of a human. The brain is the hardware, and how it works is the software. But not like stupid software on a computer that can only do what someone tells it in advance. The brain has imagination, creativity, and emotions, so it's software on a completely different level.
The brain can simply produce something new. It releases neuronal impulses in other ways; it switches to somewhere else, and a thought comes out of it. An idea will come out of it. And that's what matters."

- The brain has 90% supporting cells and 10% nerve cells, where tumors are rare. Does this mean the brain knows it needs itself, so it doesn't make itself sick? -
"The brain is a whole of that supporting mass, glia, and nerve cells. One cannot exist without the other. Surprisingly, tumors do not grow out of nerve cells; a tumor there is absolutely unique, and if there is one, it's benign. Tumors grow out of the cells of the supporting mass. And that's a big problem because it's almost untreatable."

- Is there any place in the brain that can't be accessed? -
"You can get everywhere, but the point is that there are places you won't go anymore. I don't do much work inside the brain, but under the brain, at the base of the skull. There are the cranial nerves and the brainstem - and there are the best and most arduous tumors that are benign. I usually go into the brain for cavernomas, which are vascular anomalies. I don't enjoy operating on those glial tumors."

- A brain suffering from dementia is only concerned with itself, it has no other vision. Does this mean that in dementia, the brain loses creativity, which is a superstructure? -
"Certainly. We have already talked about it several times with the Egyptologist Bárta. I think that civilization or society repeats the life of the individual. It is an organism with its own laws, which he describes beautifully in the laws of Heraclitus. But these are actually the laws of the individual - society evolves, and the same factors that lead to its apex also lead to its demise.

And it's logical. A young person is predatory, eager for everything, and at the apex of his powers. And he's healthy. Then, that health begins to fail, and thus, the same factor that led to its rise leads to its downfall. And the end, dementia or an illness, that's Taleb's "black Swan", will suddenly change

absolutely all hierarchies because the most important thing is health. Until then, you have it guaranteed, and you don't even think about it. And then suddenly that person starts to deal only with the disease, and therefore only with himself."

- What can the brain manage when it has a problem? -
"Whatever. Of course, it just has to have a use for it. Your brain lets a fraction into your consciousness. It does most of the activities without telling you. At night, it generates your dreams, stores your memory, and shuffles you around so you don't have bedsores. Your brain drives the car for you so you don't have to think about it. In short, it does what it wants - it takes care of your well-being all by itself. And what's more, the superstructure and what it'll do, is anyone's guess. It is capable of anything."

- Is it true that the brain filters information to us according to what it thinks we can handle? -
"Your brain filters information according to what's important to you. It's not about what you can handle; the brain can overwhelm you, but it won't because it doesn't need to. These days, I'm beginning to think that its capacity is so great that the brain actually remembers everything.

Complete insanities are shown to us in our dreams, but the brain has to get it from somewhere; it has to have it somewhere. What is released into your consciousness is only a tiny fraction and only what you need. That is, what it sees as necessaryto be aware of. It is one entity, but it has its own defense mechanisms."

- Where is the intellect in the brain? -
"Intellect is a diffusion function. And we don't know about those. We can tell where the function isn't, but we don't know where it is. Neuronal brain networks take care of these functions, and they are spread throughout the brain.

It's when you see the tracks and how everything is connected to everything... We have 86 billion neurons; they are connected by trillions of connections. The network fibers in one brain would stretch twenty times around the equator in one single human brain. No computer can simulate how this works. Moreover, it is a combination of electricity and chemistry.
We cannot even define intelligence, nor so consciousness. The only reasonable definition of intelligence I've heard is from Ivan Havel, who said it is the ability to solve a problem. Any - even tying a shoelace is an intelligent act."

- How does the brain react to new sensations? -
"When a person learns something new, he turns on many more areas of the brain. You hear music for the first time and turn on ten areas of the brain - they light up on an MRI. But when you hear it repeatedly, you turn on just a tiny bit of your primary auditory cortex. So, the brain can already distinguish it selectively. It's the same with languages. When you learn it, you probably turn on much more, but when you already speak the language, you only turn on a little bit of it. This is as automatic as driving a car, walking, everything you do automatically."

- Can we ever really know the brain? -
"We cannot because we are discovering it through itself. The brain's recognitions are long, endless, straight lines that never meet. We will know more and more about the brain, but we will never know it completely."

A Doctor and His Patient

- Brain surgery is emotionally completely different than, say, hip surgery. The patient must feel a lot of trust in you, right? -
"It is his sacred duty to have that trust. In this, medicine has tremendous power over people. People see the white coat - even though I haven't worn one in many years. But the combination of the overwhelming superiority of education with the helplessness of the patient puts me in, I would say, a divine situation.

And then it's a matter of transposing that person's trust in some style so that he starts acting with me as a partner. To not be afraid and to be able to think. And I have experience with this. That even an uneducated shepherd from the mountains can understand and make decisions and be at ease when it is well explained to him. What I hate is the communist style: here you have me and heal me. That's stupid. And then there's the patient who is a "graduate of the technical university" who studies everything on the Internet and comes out completely wide-eyed because the Internet is the biggest tool for scaring patients. Fortunately, most people are normal enough with common sense who are able to think for themselves. And these are the best to work with."

- Who is the patient to you? Is he a client? A partner? -
"No. He is a patient, a sick person. You cannot treat him as a client; we are not a bank. When there are more treatment options and I see that he is a person who can think and make decisions, I will explain it to him and send him home to tell me in a two weeks what his decision is. Of course, I know the surgery will be needed. But I want to talk to that person, and I want them to add some of their own creativity and come to some kind of conclusion.

In medicine, nothing is 100 percent. I can't promise you 100% that nothing will happen; that would be dishonest. So I have to add: but it might not go according to plan. Even with a simple penicillin injection, the doctor should tell you that there is a risk of death. Because there is a specific reaction to penicillin that can really kill a patient, and it has killed a few."

- Does your strategy for communicating with the patient depend on the patient? How do you see him? -
"An arteriovenous malformation threatens the patient by rupturing and harming him. And you'll have a person sitting here who, when he finds out that he has it in his head, will hide in a corner and never come out again because he'll just wait for it to explode. And then you have another person who has exactly the same thing, and he says to you: well, but now I have tickets to the Himalayas. Which one will you offer surgery to?

You are more likely to get the one who hides in a corner and ruins his life by constantly being afraid that it will burst to surgery. Whereas with the other one who doesn't give a damn, you say okay, let him decide when he gets back from the Himalayas. He'll tell me whether he wants it or not. And this is individual.

And then, of course, there are many diseases or situations where no such rules apply, which are really individual - and then you have to make something up."

- What role does the patient's optimism and faith play in healing? -

"Not much. We call it “fighting the disease”. Of course, if the person absolutely gives in to it, it's not entirely good. But our diseases are more or less not externally controllable; the tumor does not stop growing, and the malformations do not disappear. If it's really an organic disease, tumor, aneurysm, or malformation, it's nice if the patient is an optimist because he tolerates all the hardships we put him through. But it's not possible that he himself would somehow help with the treatment."

Mythical field, crafting, and superstructure

Vladimír Beneš refuses to see neurosurgery as an exclusive, let alone mythical field. He himself calls it a simple craft.

- But isn't there a difference between me not showing my soul or body to a butcher or a carpenter and not wanting him to help me? -
"The difference is a somewhere else - in that the person is the brain. So, we really deal with what is supremely human in man. And along with the fact that it is the most complexly organized matter ever, it has a certain touch of exclusivity.

I grew up in it thanks to my father. I always considered neurosurgery to be an exclusive field of medicine, and I always thought that it could not be practiced without its academic component. A surgeon with golden hands who operates excellently, but has nothing else is someone who I thought didn't belong in that field at all because only people with academic interests should be there. They want to explore something and ask questions. It was only much later that I understood that "medical workers", normal golden hands, are also needed."

- What of neurosurgery is a craft, and what is a superstructure? -
"Craft is everything. There are three consecutive steps. The first is education, which is school, and then certification. And the need to constantly read something.

Then you have craft; it's the same as Dali or Rembrandt having to know how to draw in order to really paint. It's a craft like any other where you need a teacher to show you everything. In this point of view, medicine is an apprenticeship - you just need to get hold of someone and learn from them. There is no other way. And that's that moment when a lot of people quit because nothing more is needed to treat well. That's enough. This is what we could call the science of medicine.

And then comes the art of medicine, and I understand that to mean a person is able to ask a question and look for an answer. And that's the whole academic sphere. This is both teaching and PR. This is to estimate trends and to know what the field can actually bring in the future. But it's also the fact that a person doesn't just stick to guidelines, but they can proceed on an individual basis."

- Does this include your relationship to art and creativity? -
"It probably does. I always liken surgery to Aristotle's drama. All five of its components:
- Exposure is when a patient comes to us.
- Collision, that's thinking about what to do with it and how to do it - that's the most important thing.
- Then you have a crisis. That's surgery.
- Vicissitudes. That's what happens after surgery.
- And then there’s catharsis when the patient walks off into the sunset.

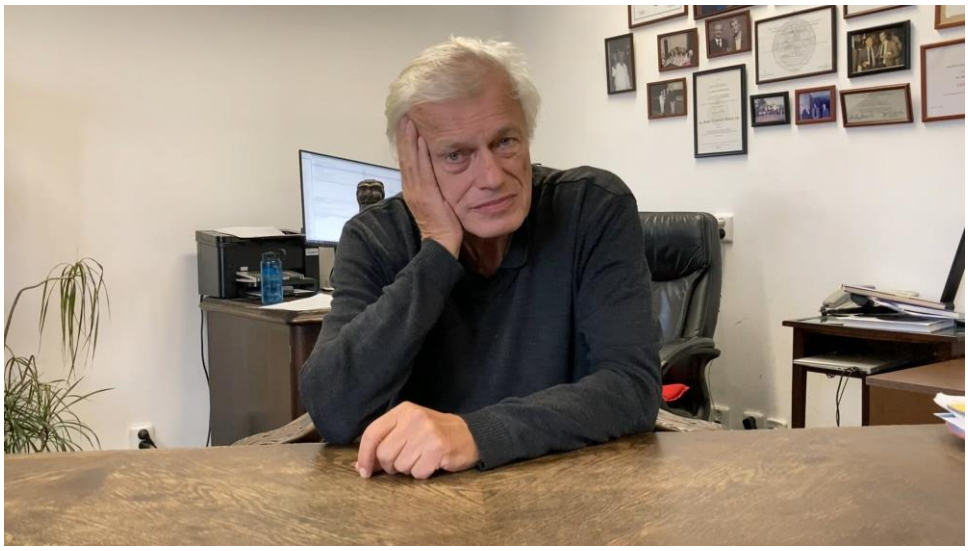
And that's how scientific papers are written. When you write an article or a chapter in a book, it has an introduction, material, and methodology. Then there's the crisis, the results that sometimes don't turn out the way they should. Then there's the vicissitudes, that is, the discussion. Then there is the conclusion, which is the walking off into the sunset. Aristotle was brilliant at this. This is repeated everywhere in life."

- What is the creativity of medicine and neurosurgery? To what extent are the procedures given, and to what extent is it up to the individual doctor? -
"The science, what you learn, is mainly randomized trials. So, what is given as a recommended treatment procedure is comparable to road signs. It is internationally understood. You understand that if they set the speed limit to 40, you have to follow it or else you'll either find out that you'll break something in the car [by going too fast] or cause a traffic jam by going too slow. You have to see this particular thing. That's one fact.

The second thing is that they set the speed limit to 40 because they don't have a sign that says 36 or 45. And then comes the individual solution. This is the one particular patient for whom I have to adapt the treatment to suit him. That's personalized medicine.

It is called personalized because you make him medicines that are just for him. But it is individualized in that I have to choose the procedure that suits the patient and that I think is best for him. That, in turn, is my responsibility - to give him a choice, but I have to lead him somewhere."

Director Miloš Forman, One Flew Over the Cuckoo's Nest and World Neurosurgery



YouTube

- What's the reason that so many doctors gravitate towards artists and vice versa? Because both are creative activities? -
"Because it is the same type of creative activity and because it's Aristotle's drama. And they are generally creative people, so they gravitate towards each other. I grew up in a typical dive bar, so I

am able to talk to everyone. But I prefer to go to the pub with Jirka Langmajer or Jirka Bartoška. Or with someone from our department.

Both are excellent actors. Jiří Langmajer narrated the audiobook My Journeys Into the Depths of the Brain (you can buy it here). Jiří Bartoška is the president of the Karlovy Vary International Film Festival

When I finish the operation and I know it's good, it's exactly the same feeling Jirka Lábus has after a successful premiere. That's the feeling of accomplishment and satisfaction of having done something well. He entertains people. I help someone. But the mechanism is the same.

Jiří Lábus is not only an excellent actor, but also a co-star and the best friend of actor Oldřich Kaiser, who goes around the world hunting bugs with Professor Beneš

Science and art have always been connected. I always get along without problems with a person who is creative and original. And the mutual attractions are there. Not always, and not for everyone, of course.

Creativity is the driving force of all humanity. After all - what did the dolphin invent? Another driving force of progress is laziness. Curiosity is also a part of it, although that’s a slightly different quality. But laziness leads you to think about how to make things easier for yourself. So you invent a hammer or a wheel."