

Welcome!

Welcome to the Neanderthal Museum. At some spots in the museum, our visitors can listen to an audio tour, which we also provide for our deaf guests in written form.

The exhibition is parted into seven consecutive areas, each starting with a green gate. Follow the upcast way to experience the Neanderthal Museum's attractions in their considered order.

Start your tour at the first gate "A Valley and Its Secret". Follow the green tunnel up to the oil painting. Take your time to explore the first part of our exhibition and read the next section of the audio tour when you are standing in front of the large cave.

1. A Valley and Its Secrets

AUDIO GUIDE: The discovery of the Feldhof Cave

Voices: *Young Workman*
 Old Workman
 Narrator
 Girl

(echoing steps, the sound of tools hitting on stone, the scratching of a shovel on ground – suddenly, the scratching stops....)

NARRATOR: *(over background noise)* “It all happened back in 1856. Some workmen had squeezed into the Feldhof Cave with their shovels and pick-axes. They wanted to clear it so that the limestone inside could be extracted. Nobody was expecting to find anything unusual.”

YOUNG WORKMAN: “Hey, what's that over there?”

OLD WORKMAN: “Eh? *(comes over)*”

YOUNG WORKMAN: “Over there. They're bones, aren't they!”

OLD WORKMAN *(drawn out, as if trying to gain time):* “Well, yes... Few old bones. That's right.”

YOUNG WORKMAN: “But look at them: This one here's over a foot long!”

OLD WORKMAN: “Hmmm... well, must have been a deer then.”

YOUNG WORKMAN: “Deer? Up here in the rock? Never on your life. Hang on! I was just looking out of the entrance. I was looking down to see what happened to the clay I'd thrown out. *(mysteriously)* For a moment I thought I could see part of a skull down there. What kind of animal could it have been?”

OLD WORKMAN: “Calm down, it was probably just one of these old bears that the boss told us about....”

NARRATOR: “But the bones the two quarry workers chanced upon in August 1856 in the Feldhof Cave were actually human remains. Johann Carl Fuhlrott, a schoolteacher and scientist brought in from nearby Elberfeld, recognised this immediately. And he also noticed that this human skeleton looked exceptionally powerful and primitive. However, as the excavations had continued in the meantime, it was impossible to work out where the bones had been lying.

Along with Hermann Schaafhausen, a professor of anatomy at Bonn University, Fuhlrott presented the find to other scientists. Schaafhausen cautiously described the skeleton as a "human species at an early developmental stage". That in itself was enough to spark a violent controversy - among German scientists, in magazines and in books - during the course of which the term "Neanderthal Man"

was coined.

GIRL: “Did the Neanderthal Man live in a cave?”

MALE NARRATOR: “That is what many people think. But in reality, Neanderthals mostly made their homes in tents and huts. It is impossible to say how the bones got into the Feldhof Cave - there is nothing left of the cave nowadays. The man probably did not crawl into it. It seems more likely he was laid to rest there after his death.”

Now, turn to your right and walk through the second gate with the title “A Journey Through Time”. Read the next part of the audio tour when you have reached the large sandglass.

2. A Journey Through Time

AUDIO GUIDE: The sandglass

Voices: *Male narrator*
 Female narrator

(The part of the MALE NARRATOR is accompanied by meditative background music).

MALE NARRATOR: “Time passes. Evolution needs immense quantities of it. Species come into existence only to die out again. It is the river of time, spawning them only to sweep them away again. The earth came into existence five billion years ago. About four billion years ago the first unicellular organisms emerged, each smaller than a grain of sand. And in another five billion years the earth itself will end, crashing into the sun. We can't appreciate timescales of this size properly. In order to really understand them we would need to be like God for whom - according to the Bible - a thousand years are like a single day. But an hourglass may be of help...”

FEMALE NARRATOR: “Try to imagine that every grain of sand dropping here is the equivalent of one year. Our lives would already be over. For more than a hundred grains slip through the neck every single second. “

MALE NARRATOR: “And from the age of the Neanderthals to our modern day the

hourglass would need a full five minutes.”

FEMALE NARRATOR: “But what are five minutes compared to eleven hours? That would be equivalent to the time that man and all his ancestors have been living on the earth.”

MALE NARRATOR: “And then again, what are 11 hours compared to 440 days? We'd have to watch this hourglass for 440 days to appreciate how long there has been life on earth.”

(Stop music)

FEMALE NARRATOR: “There is another way to appreciate the passing of time. You can take a trip through the Neanderthal Museum.”

Step up to the wooden construction behind the sand glass. There, six of your ancestors are awaiting you to tell you their stories. Approach the elderly Neanderthal woman first.

AUDIO GUIDE: *Homo sapiens neanderthalensis*

Voices: *Neanderthal woman*

NEANDERTHAL WOMAN *(with a warm, deep voice)*: “This is our home. Where the land appears to end and you can look far out over the sea. You call it Gibraltar today. The climate is mild here, warmer than in the north. Our prey have also withdrawn to the southern areas. In our cave, my family and I can shelter ourselves from the weather. We have access to fresh water and there is a wide variety of food along the coast and in the hinterland.

Once, when I was out with my ten year old daughter and my six year old son, collecting mussels and catching turtles for the evening meal, they asked me, “Mama, what was it like before? Please tell us.” I laughed and felt pleased. My children love to hear the old stories. That way they come to understand our way of life better, learn how to hunt, how to make tools, which plants can be eaten, and how injuries can be healed. It is important to me that they look after, and care for, each other. I pass my knowledge on to them just as my mother passed hers on to me when I was young. Today I am a mature and experienced woman and am valued and respected in my group. I have become familiar with many areas and experienced a lot.

Would you like to listen for a moment longer and hear more of my personal

story? Captain Edmund Flint, an officer in the Royal British Navy, discovered me in 1848 in the Forbes limestone quarry. That was 8 years before the eponymous Neanderthal was discovered here in the Neander Valley. At the time of my discovery, scientists did not know what to make of me. They thought I was an ancient person who had died before the Biblical flood. Nobody took any further interest in me. Ten years later Charles Darwin appeared on the stage and published his groundbreaking book “On the Origin of Species”. He – yes, the famous Charles Darwin – took a closer look at me and recognised me for what I am: a human species. More precisely put: a female Neanderthal, *Homo sapiens neanderthalensis*. I am very similar to you – *Homo sapiens sapiens* – in more than just name. We are related and even encountered each other during the Ice Age. The man from Oase over there can tell you more.”

Continue with reading the story of the young man.

AUDIO GUIDE: *Homo sapiens sapiens*

Voices: *Young Homo sapiens sapiens man*

YOUNG MAN (*thoughtful*): “What is a human? What makes one human, I ask you. An intelligent species, with extraordinary intellectual capabilities, with the capacity for abstract thought, complex cultural behaviour, and artistic abilities, which differentiate us from all other species? When thinking about ourselves some things can seem more important than they really are. Whatever!

Life is made really interesting by our interactions with other people, isn't it? These encounters form us and make us who and what we are. Humans. *Homo sapiens sapiens*. I too am one of the “doubly wise” people. And I carry a secret within me....

When I was discovered in 2002 in the Peștera cu Cave in Rumania, the researchers knew as soon as they examined my skull that I was something special. They realized that I have features typical of archaic humans, like my delicate cranium for example, but also features typical of Neanderthals, like my large face and massive teeth. They wanted to be absolutely sure of their findings, however, and ten years later they examined my DNA. It delivered the proof: 9 percent of my DNA comes from Neanderthals – considerably more than the 4 percent that all other Europeans possess. What a surprise!

Me, the result of interbreeding between modern humans and Neanderthals in Europe. Until that point in time, researchers believed that archaic humans and Neanderthals had only come into contact in the Middle East. My group belonged to the first wave modern human immigrants, who came to Europe more than 40,000 years ago. In my family the story is told, that many years ago we moved around the area far to the east near the Black Sea, where Neanderthals and other humans, like the Denisovans lived. We encountered each other and, well, what can I say, there appears to have been some very close contact now and then. My great great grandmother was the result of some hanky-panky between her mother and a Neanderthal man. Was it love? Who can say?

This great great grandmother grew up as a mixed-species child in my family and sought out an archaic human husband when she was grown up and old enough to have children of her own. Interaction with other humans is part of our family history. And part of yours too."

You can read the next part of the Audio Tour near the old hardy man who is painting his leg at the moment.

AUDIO GUIDE: Archaic Homo sapiens

Voices: *Old, hardy Homo sapiens man*

OLD HARDY MAN (*with rough but friendly voice*): "I belong to the first. To the first anatomically modern humans in Africa. Researchers discovered me in 1961 in a cave in Jebel Irhoud in Morocco, about 100km west of Marrakesh. My ancestors came here to the north from eastern Africa. Are you wondering if I am annoyed that researchers thought I was a North African Neanderthal at first? No. It isn't an insult to be called a Neanderthal. It does surprise me a little however. In terms of physique we are distinctly different. In contrast to Neanderthals I have a slender body and a rounded skull with a high forehead. Well, across from Morocco, in Gibraltar and southern Spain, there were Neanderthals living long before us. Whether we had contact with them is something researchers are still trying to find out.

We - archaic Homo sapiens, as researchers call us - use the same tool technology as Neanderthals. It is called Levallois technology. It involves the targeted striking of fine individual flakes from a prepared piece of flint. In my bag, along with other tools like a handaxe and a scraper, I have a few Levallois blades. My bag is very practical when I am travelling a long way and want to take some important things along. Using a strap across my forehead it is easy to carry. It is very hot and dry here during the day, but cold at night. That's why I also carry a light cloak in my

bag, so that I don't freeze when I sleep.

Are you looking at my body painting? For the red colour I collected red ochre and ground it to powder. You can mix it with a little water and make a thick paste. I paint myself before I go out hunting. It's part of a ritual with which I prepare myself and get into the right state of mind for the hunt. Red is the colour of life. It looks powerful and vibrant, like blood. You can make other colours using yellow ochre or manganese. These coloured pastes are also well suited for painting stones and rock walls. As the coast is nearby, I collect small snail shells on the beach and use them to decorate myself. Take a look over there in the display case.”

To read the next part of the tour, walk over to the young boy with his stick.

AUDIO GUIDE: Homo erectus

Voices: *Turkana boy*

TURKANA BOY (*amiable, young and energetic*): “Hi! How's it going! I am the Turkana Boy, from the Nariokotome River in Kenya. Kamoya Kimeu and other researchers found me in 1984 on the river bank and were excited by how complete my skeleton was. They also call me KNM-WT 15000, or Homo ergaster. I am one of the members of the genus *Homo* that, in contrast to the Australopithecines, could do a whole range of new things. With our larger brains we could develop manual skills. We are also constantly on the move, covering great distances as we search for prey. Some members of my species even left Africa and spread into Asia and Europe. Many species of the genus *Homo* lived side-by-side in eastern Africa during my time. You can see some of them over there. But now more about me.

I am the same age as Karabo, the *Australopithecus sediba* back there, but much taller than him. I grow quickly. My back often hurts though. A vertebra in my lumbar region was injured in a fall. As a result, even though I have long legs, I can't run as fast, or for as long, as the others. The sometimes day-long hikes are stressful and exhausting, because it is hot and dry during the day. The nights, on the other hand, can be cold. It is good that we can make warm cloaks from the skins and furs of our prey. The others show me how to make stone tools. It is very

helpful to be able to work on the prey we kill with sharp scrapers and handaxes. You can see what they look like in the display-case over there.

I made this stuff myself too. I removed the bark and smoothed the surface with a scraper. When I am not using it to lean on, I like to use it to stir up the sand on the river's edge and scare the fish. By the way, have you noticed my teeth? I don't want to sound like a baby, but they hurt too, like my back. Something in my jaw seems to be inflamed. I wonder if it will ever get better?"

The next part of the tour awaits you near the shy young boy, who is folding his arms behind his head.

AUDIO GUIDE: Homo erectus

Voices: *Karabo*

KARABO (*shy, cautious, a bit grumpy*): "Are you looking at me? You want to know more about me? Hmm... well, my name is "Karabo", which means "Answer" in the local Setswana language. That's pretty funny, because researchers have more questions than answers about me. But let me start from the beginning.

In 2008 I was discovered by Matthew, the then-nine year old son of the well-known palaeoanthropologist Lee Berger, in Malapa Cave in South Africa. When he found me, Matthew was only a little younger than I was when I had my accident. I was almost 13 and was walking with one of the women from our group when we fell into the cave. An embarrassing story – I don't want to talk about it. After Matthew found us, his father and some of his research colleagues turned us inside-out.

I was given the totally uncool scientific name *Australopithecus sediba*. The researchers examined me very closely and asked themselves what I like to eat. The answer, of course, is whatever I can find in the forest and on the savannah, like roots and wild plants, and sometimes nuts too, although they are very hard. The researchers also gave a lot of thought to my physique. Well, as a teenager, what can I say about the fact that they found my proportions and how I walk very strange? My upper body is slender, my arms are long and lanky, and I walk with bowed legs because I walk on the outer sides of my feet. Walking upright on two

legs is a skill that needs to be learned, when you spend most of your time hanging around in the trees. In any case, researchers believe that upright walking could have developed in many ways. Everyone's different. Meanwhile, researchers now doubt that the cradle of humanity is only located in eastern Africa. In southern Africa, in my hood, more finds of early hominins are being made all the time. As for me, researchers still can't decide if I have more features like *Australopithecus* or like *Homo*, or if I could even be an intermediate form between *Australopithecus africanus* and an early form of *Homo erectus*. Whatever! I am who I am. For a different perspective, take a look at how many hominin species lived in Africa at the same time as me, and at how different they all look.”

Continue the tour by walking up to the little woman at the end of the wooden construction.

AUDIO GUIDE: *Australopithecus afarensis*

Voices: *Lucy*

LUCY (*self-confident, charming, with star appeal*): “You probably know me as Lucy. I was given that name in 1974 when Donald Johanson discovered me in Hadar, Ethiopia, in eastern Africa. The researchers were so fascinated by me and so happy about my discovery that they celebrated and the Beatle's song “Lucy in the Sky with Diamonds” was played over and over again in the camp. And that's how I became famous.

I have other names too. In Amharic, the local language, I am called “Dinknesh”, which means “Wonderful One”. I couldn't have thought of a better name myself. The researchers also gave me a scientific name: *Australopithecus afarensis*. That's me.

Although I am only 105cm tall, I am 25 years old. Our men are much larger. Take a look at the skull over there. My body is perfectly built for moving around in the forest, searching for tasty nuts, fruits, and grasses. It is an advantage if you can obtain a variety of food from here and there. Although I like to get around on foot, I can also use my powerful arms to climb very well. High up in the trees it is nice and airy, and you can always find a safe place to sleep.

For a long time, researchers believed that being a good climber was all that was needed in the forest. Naturally though, we often spend time moving around the forest on two legs. Look at “Ardi” over there, *Ardipithecus ramidus* that is, the

forest-dweller who comes from the same region as us. They proved to researchers that our hominin relatives living on the savannah weren't the first to discover walking on two legs.

Talking of walking and movement, let's go back to my discovery for a moment. The researchers were so excited that they took me along on their travels. From 1975 to 1980 I was in the Cleveland Museum in the USA, after which I was in Addis Ababa. Starting in 2007 I went on tour in the US, until I took a break in Houston in 2009 – being a world-renowned celebrity takes it toll on you. Finally, in 2013, I returned to Addis Ababa.

But that's enough about me. Have a look around and find out what makes the others so special.”

Step through the third green gateway, called "Life and Survival", and learn more about the evolution of humanity on the luminous map of Africa.

3. Life and Survival

AUDIO GUIDE: Beginnings in Africa

Voices: *Narrator*

(ethereal, meditative music, with a hushed ticking of a clock in the background)

NARRATOR: “Evolution is a game of chance and adaptation. Since its beginning, the Earth has repeatedly undergone dramatic climatic changes. From deserts and glacial landscapes, forests and steppes were created, which subsequently dried out or froze once more. Constantly in transition, species arose and then became extinct.

On this constantly changing world, people came into being. And in Africa, the cradle of humanity, the first hominins emerged.

The term hominin is used by scientists for all human species – modern-day Homo sapiens and all of their extinct ancestors. Long before the Ice Age, Africa was subject to major climatic fluctuations. Desert, savannah, and rainforest

continuously expanded and contracted.

Sahelanthropus, found in present-day Chad and dating to around 6 million years ago, is currently the oldest known hominin. They lived in a landscape of lakes and open forests.

Ardipithecus walked on two legs, similarly to modern humans, more than 4 million years ago, but also spent time in the trees. There they moved through the branches on all fours.

The period between 4 and 2 million years ago was a boom time for hominins. The changing climatic and environmental conditions produced a variety of physical adaptations. Various species lived in and on the edges of forests, along lake shores, or on the savannah.

Their diets consisted of grasses, fruits, insects, tubers, termites fished from their mounds with sticks, or meat, possibly obtained by snatching it away from other animals. The varying diets and ways of life resulted in differing forms of skulls, jaws, torsos, limbs, hands, and feet. Adaptation and diversity were the recipe for success among early humans.

Over thousands of generations, particular features proved to be especially advantageous, and genetic exchange brought together the special mix of features characteristic of the genus Homo: walking upright, hands that can use tools, and an enlarged cranium.

With the rise of Homo erectus 1.9 million years ago, there existed for the first time a type of human whose physique was broadly similar to our own – only their brains were smaller. With them, the cultural flowering of the hominins began, and they were the first to leave Africa, spreading north and east.”

Continue along the path to the curve. Start the next part of the tour, "Neanderthals and Us" and learn interesting facts about our Mr. N who is standing in the spotlight.

Audio Guide: Mr. N

I am actually rather modest, but yes, it's true: I'm a star among prehistoric humans. Allow me to introduce myself: Mr. N, THE Neanderthal.

The very Neanderthal that was found here in the Neander Valley in 1856 and became the first prehistoric human to be described from head to toe. That's why my name was given to the Neanderthal species.

It goes without saying that my distinctive physique and appearance are equally fascinating to both researchers and artists. Twin brothers, Adrie and Alfons Kennis, are artists and preparators and have put each of my bones back together. My muscles were moulded onto my bones, my face was reconstructed and, piece by piece, new life was breathed into me. The fact that I'm standing here naked should bother you as little as it bothers me. In any case, it means that you can take a detailed look at my typically Neanderthal physical features. Our way of life is hard, we walk a lot and we need strong muscles with lots of stamina. This means that, compared to you, I had to eat a lot more so that I would have enough energy.

Have you noticed my disability? My left arm is atrophied. I have had limited movement in it ever since a hunting accident. My arm was broken below the elbow and didn't grow back together properly. Fortunately I wasn't alone and much worse could be prevented.

I can look back over a long life and I know how to survive an Ice Age. In my tribe I am among the elders. They value my knowledge and my experience, and they look after me. Without the care and support of my family I would not survive.

Have you asked yourself why my skin is so dark? For people like me who are constantly out in the open and exposed to sunlight, dark skin colour is normal. Our diet is rich in vitamin D and we don't need light skin to obtain a sufficient supply of it. Having said that, there is a wide spectrum of skin colour among us Neanderthals. Depending on the region it can vary a lot, sometimes it's lighter and sometimes darker. It's the same among you Homo sapiens sapiens. We are all diverse and it has always been that way, ever since the beginnings of humanity.

It's been a pleasure to meet you. Say hello to the other prehistoric humans for me when you drop in on them.

When you continue onward you come to the section called "Humans and the Climate". Stop by and see Mr. 4%, who is leaning on the parapet, and read what he has to tell you.

AUDIO GUIDE: Mr. 4%

Come on, admit it:

You just saw me from the opposite side of the museum and thought I was just another visitor, casually leaning on the parapet. A nice guy in cool clothes, yeah? Have you noticed anything now that you've had a closer look? That's right, I'm a Neanderthal. My name is Mr. 4%.

Why 4%? Let me tell you about how research is unravelling the complicated history of our encounters. Today it's no secret that Neanderthals and Homo sapiens sapiens met and interbred. And why not? We're all human beings after all. Researchers are slowly but surely learning where and when those many encounters took place.

No-one can tell by appearances alone, however, that we interbred. That's where the latest research comes into the picture. Experts have analysed both our and your blueprints, that is, our DNA. Our DNA, in turn, is made up of genes. These are the smallest units containing our genetic information. They make us the individuals that we are. Specialists in ancient DNA have looked very closely at these and compared them with each other. They discovered that humans today still carry between 1.5% and 4% of our Neanderthal genes. In the course of evolution this percentage will become ever smaller. In the past, during the Ice Age, our genes were useful for you, but today you don't need them.

Now, let me tell me tell you a secret: we didn't just interbreed with Homo sapiens sapiens, we also did so with the Denisovan people, who lived in the area from southern Siberia to China. They are very similar to us Neanderthals too. Just as we did with you, we shared our territory with them, and sometimes even shared the same campsites. These encounters sometimes led to very close relationships and even children together.

What is it like for you today? How do you approach people that you don't know and who, perhaps, appear strange to you at first? Why don't you try it out here in the museum and stop for a look in the tunnel. Who knows who you might meet there?

Until next time. Take it easy.

Walk through the fourth gate, "Tools and Knowledge". There you can read the next chapter "Stone tool maker" when you have reached the Neanderthal sitting on your right hand side beside the staircase.

4. Tools and knowledge

AUDIO GUIDE: Stone Tool Maker

Voices: *Male Neanderthal*
 Narrator

NEANDERTHAL (*thinking out loud*): “The black rock runs well. It's as soft as bison fat - blow by blow - it was worth lugging all the way back to the camp. Good thing that the boy discovered the spot near the white cliff. I must remember that when we return to the valley in the spring... Just straighten the edge a little there. Hmm. Nearly took off too much there! So, left, right, left - sharp and pointed - two for the horse spear. I can take the flat one with the straight back as a knife...”

NARRATOR: “Our ancestors have been using stone instruments for over two million years. Often enough this is all that remains of them and their lifestyles: stone is more durable than wood or bone. Not every type of rock was suitable for toolmaking. It had to be easy to split and to produce sharp edges at the point of fracture. Quartzite, vitreous lava and flint were all viable options.

The Neanderthals progressed far beyond the early tools made in the African savannah. They were careful in their choice of stone - which they could find only under specific geological conditions. Sometimes they would carry the rock for over thirty miles during their seasonal migrations.

The Neanderthals didn't simply hit rocks indiscriminately. They developed sophisticated techniques for constructing tools. This entailed the rocks being carefully prepared with a series of relatively light blows. Ultimately, this manufacturing process allowed flakes - thin cutting tools - to be made in almost any shape or size. The same technique was often applied when beveling the edges of these roughly hewn instruments, increasing the tools' efficiency. Stone tools could be used to fashion a broad range of other implements from wood, bone, deer antlers, bark or leather. Often enough, wooden handles were attached, making them easier to hold.

The Neanderthals generally used flakes that were either oval-shaped or broad. Only rarely did they make long, narrow blades with parallel edges. These did not become the dominant tool shape until the final phase of the Ice Age, between 40,000 and 10,000 years ago. With time, these blades became increasingly uniform in appearance, and toolmakers gradually learned to exploit the full potential of the available material.”

Before entering the sector “Myth and Religion”, you can read the next chapter of the tour whilst watching the movie “The Past of the Future” on the displays of the three stone pillars. The movie starts after the title “*Die Vergangenheit der Zukunft*” (= The Past of the Future) and a wheel appear on the screen.

AUDIO GUIDE: The Past of the Future

Speakers: *Narrator*

NARRATOR: “To the same degree that we unlock the secrets of the past, the future stimulates our fantasy. We are already familiar with technological visions from antiquity: Daedalus and Icarus escape from their imprisonment with self-made wings. The first documents of such visions originate from Leonardo da Vinci: He sketched countless ideas, ranging from the helicopter to the automatic spit, which much later became real inventions. Whilst Thomas Morus’ utopia remained a vision of a non-existent or ideal location, the vision of “New Atlantis” by Francis Bacon during 1626 had different goals.

Scientific planning was intended to replace religious prophecy to better protect humans from catastrophes. During Bacon’s era, the first ‘technological buzz’ began in Europe, as well as the belief that technological advancement made actively shaping one’s own destiny possible. This optimism continued during the 19th century. The invention of the railway increased the speed of passenger and freight services. Warnings about the dangers of velocity were soon discovered to be unfounded.

The construction of the London subway – still caricatured as a pipe dream in 1846 – was already reality 15 years later. Enthralled by industrialisation, Jules Verne designed fantastic visions of the future during the end of the 19th century. In a futuristic Paris in the 20th century, automatic trams, writing machines and photographic telegraphy existed. At the same time space was conquered and the ocean bed colonised. Some of his ideas have today been realised. Others remain visions.

In the 20th century, the future and technological progress were regarded more and more critically. Subsequent to the global economic crisis, a new literary genre developed: Science Fiction. The escape into the future distracted from the dull reality. Simultaneously, technological projects became increasingly

ambitious. In 1925 the “Plan Voisin“, by architect Le Corbusier, planned to tear down the entire Parisian city centre in order to erect high rises which would house 3 million people. The German architect Hermann Sörgel planned to divide the Mediterranean Sea from the Atlantic Ocean with a huge dam in his Atlantropa-Project.

Life in the futuristic world was parodied time and again. The overdrawn pictures were also supposed to cancel out fear of the future. The discovery of atomic energy led to grotesque visualisations of future technological worlds. Even a critical thinker such as Ernst Bloch was fascinated by the vision of a peaceful use of atomic energy and believed: “A few hundred pounds of uranium and thorium are enough to make the Sahara and Gobi deserts disappear, to transform North America, Greenland, and the Antarctic into the Riviera”.

During the 1950s, futurology gradually established itself as a scientific discipline. One of its most popular representatives was Hermann Kahn, founder of the Hudson Institute, who constantly publicised new prognoses and visions of the future which didn't hold up to any inspection. Included in these were anticipations of weather control, permanent stations on Mars and the permanent colonization of the ocean bed. At the same time however, institutions developed which could be taken seriously - such as the Club of Rome or the Rand Corporation - and also dealt with questions about the future development of society. At times they expressed heavy criticism.

Today analyses and prognoses of the future offer national governments, international organisations or commercial enterprises guidance in decision making. The initial naivety has given way to the insight that the future can only be controlled to an extent. Will major projects such as the floating city X-Seed 4000 in Japan ever become reality? Will the car of the future run without use of fossil fuels? The future lies wide open. We humans have the responsibility to do everything in our power to make it worth living.

Proceed now through the fifth gate “Myth and Religion”. Afterwards, turn left and approach the five large bronze ears. At each of these installations, you can read an excerpt of the myths of different indigenous people.

5. Myth and Religion

AUDIO GUIDE: Ear 1 – Myths of Native Americans

Voices: *Female Narrator*
 Male Narrator
 Creator of the World

MALE NARRATOR: “The legends of North American Indians recount how the sun, moon, earth and mankind came to exist. They explain why the seasons change and where the bison go. In the prairies of the American Midwest the Winnebago people tell how the creator’s wishes alone were powerful enough to create the world.”

FEMALE NARRATOR: “Long ago the creator of the earth was sitting in empty space. When he saw that nothing existed, he began to cry. The tears rolled down his cheeks and fell to his feet. When he looked down some time later, he saw that his tears had formed the Great Lakes. The creator said to himself:...”

CREATOR OF THE EARTH: “Just as my tears have turned to lakes, I need only to wish something and my will come true.”

FEMALE NARRATOR: “And so he wished that there be light. And there was light. And he wished that the earth existed. And the earth came into being. He looked at it and it pleased him. But the earth would not stop moving. And so he created trees to hold it in place. But the earth still wouldn’t stop moving. And so he created rocks and stones. But it still kept moving. Thus he created the four winds, from the north, south, east and west. These used all their might to try and keep the earth still. But even this didn’t help. And so the creator formed four great creatures and shot them through the earth like arrows so that their heads looked out the other side. Those were the four beautiful serpents. Now at last the earth was still and everything was calm. The creator thought:...”

CREATOR OF THE EARTH: “As everything takes shape as I wish it, I will make a creature in my own image.”

FEMALE NARRATOR: “He took a piece of clay and moulded it so that it resembled him. He looked at it and spoke to it. But the clay had neither mind nor spirit. Nor did it have the power of speech. So the creator of the earth gave it all these things and then spoke to it again. The piece of clay spoke now, but the creator understood nothing. And so he breathed into its mouth, spoke to it and the

creature then replied in clear language. Thus it was that man appeared on earth.”

AUDIO GUIDE: Ear 2 – Myths of the Edda

Voices: *Female Narrator*
 Male Narrator
 Child

MALE NARRATOR: “Among the peoples of the north - where the winters are long and hard - ice has a special importance. Its melting signifies the emergence of life. In the thirteenth century the Icelandic poet Snorri Sturluson described the origins of the world in the Edda, a Nordic saga.”

FEMALE NARRATOR: “In the beginning icy cold reigned in the north. That was the province of darkness. In the south was the realm of fire, the region where great heat remained supreme. Between them lay Chaos, basking in the pleasant warmth.”

CHILD: “And what happened then?”

FEMALE NARRATOR: “The fire and the ice met. The ice melted into thousands of droplets of water, spawning life. The new creatures included Ymir, the mighty, evil giant. He was fed by a large, beautiful cow, from whose udder four rivers of milk flowed.”

CHILD: “And what did the cow eat?”

FEMALE NARRATOR: “The cow licked the salty coating of frost off the rocks. Three days later the rocks gave birth to Buri. Buri was strong and handsome and his son Bor gave birth to three sons of his own. Odin and his two brothers - Lodur and Honir - killed the evil giant Ymir.”

CHILD: “And how did the brothers create the earth?”

FEMALE NARRATOR: “They took the giant’s corpse and filled up the lakes and seas with his blood. They formed the land with his flesh and the mountains from his bones. Then they took his skull and used it to create the sky: with its daytime and nighttime, its drifting clouds and sparkling stars.”

CHILD: “That was some feat! But how did man come to be on earth?”

FEMALE NARRATOR: “One day the three brothers went for a walk by the sea. There they found two fine tree stumps. They took these stumps and created human beings from them. Odin gave breath and life to the pieces of wood. Honir gave them their souls. And Lodur took care of their appearance and made sure that they could see, hear and speak. In this way they created man and woman from the two trees. From that day onwards man and woman inhabited the earth.”

AUDIO GUIDE: Ear 3 – Myths of the Mali

Voices: *Female Narrator*
 Male Narrator

FEMALE NARRATOR: “Under the rocks of Bandiagara - in Mali, West Africa - the Dogon people are preparing a funeral ceremony. The village’s wise man has died. The villagers are dressed in finery and have donned funeral masks carved from wood. They are going to perform a dance of death, to help the man on his passage into the other world. In this way the old man will join the ranks of their ancestors. Without actually seeing him, the old man will ascend to the deity Amma, the supreme creator of man and earth.”

MALE NARRATOR: “It was Amma’s task to create the world. But his first attempt ended in failure. He only managed to create the water, earth, air and fire. So Amma tried again. This time he said the word “World” and in doing so created an egg, the cosmic egg. He then put two pairs of twins inside the egg and waited for them to grow. But before the twins had grown properly, one of them broke out of the egg. He stole the power of speech from his father Amma and made off into the darkness - taking a piece of the egg with him. That piece of egg became the earth. Yet, the twin felt very lonely and decided to try and find his twin sister in the subterranean realm deep inside the earth. But in doing so, he wreaked such havoc that the earth began to decay. This gave rise to death and that made his father Amma very angry. He punished the boy by turning him into a fox and cutting off his tongue. Then he condemned him to roam for all eternity in a futile search for his sister. From that time onwards chaos reigned on earth.

(chaotic-sounding music)

In order to purge the universe, Amma then decided to sacrifice the second twin. The boy’s blood became the stars, the edible plants and the animals. And at that

point Amma took the remainder of the egg and used it to build an ark of the purest clay. He once again woke Nommo, the master of water, life, language and fertility, and gave him eight children - four sets of twins - to inhabit the world. Amma put all the twins in the ark and sent them down to the earth.

(seconds sound of rain)

The first rains fell. The first ocean filled with water. The sun rose for the very first time. Nommo departed to live in the sea. His children, the eight twins, took the clay from the ark and laid it out on the contaminated ground, creating a field and then cultivating it. But the twins still mumbled like small children. So Nommo taught them to speak. He showed them how to weave cloth and encouraged them to join in marriage. In this way the first community of men and women came into being.

AUDIO GUIDE: Ear 4 – Myths of the Maori

Voices: *Female Narrator*
 Male Narrator

MALE NARRATOR: “Hundreds of islands dot the Pacific Ocean like pearls on a necklace. They are linked by a story of creation in the form of a song. As the Maoris tell their children, anyone wanting to hear this song need only hold a seashell to their ear.”

(sound of the sea, fading slowly. Simultaneously, voice of female narrator fades in)

FEMALE NARRATOR: “The idea gives rise to growth. The growth generates thought. From the thought comes recollection. From recollection, consciousness. From consciousness desire. The world becomes fertile. It pauses in the pale sunlight, it ushers in the night. The magnificent night, the long night, the deep night, the high night. The deep night that we can sense. The night that we touch, the invisible night. The night that follows night. The night that ends in death.”

(sound of the sea, fading slowly again. Simultaneously, voice of female narrator fades in)

FEMALE NARRATOR: “Emptiness gives rise to procreation. The emptiness generates growth. From emptiness comes abundance. The spark of life pauses

in the empty space. It creates the atmosphere above us. The sky overhead, the great expanse, pauses in the first light of day. The moon arises. The atmosphere above the earth pauses in the brightly-lit sky. The sun is born. Like gigantic eyes in the sky, the moon and sun are cast upwards. The first dawn, the first day, the first high noon. From the sky grows the glory of the day.”

AUDIO GUIDE: Ear 5 – Myths of Shintoism

Voices: *Female Narrator*
 Male Narrator
 Izanami
 Izanagi

FEMALE NARRATOR: “Shinto is the native religion in Japan. In the Nihongi - a major religious work telling the country’s history - we find the parable of the two deities Izanagi and Izanami.”

MALE NARRATOR: “In the beginning was the chaos where heaven and earth were one and the same. Then the pure, light part of chaos became the heavens. And the heavy part solidified and became the earth.”

FEMALE NARRATOR: “The gods and spirits appeared between the earth and the heavens. They looked down and saw the sea. They saw Izanagi and Izanami flying over the sea on a heavenly raft. They looked at each other and said:...”

IZANAMI AND IZANAGI: “Isn’t there supposed to be land down there under the sea?”

FEMALE NARRATOR: “And so they took a long jewelled spear and pushed it down through the water. Then something very strange happened. When they pulled the spear out of the sea, drops of water slowly fell from it and formed the large island of Onogoroyima.”

MALE NARRATOR: “The Izanagi and Izanami descended from the heavens and resolved to live on the island. Izanagi walked around the left hand side of the island and the goddess Izanami around the right. Eventually they came face to face on the other side.”

IZANAMI: “Izanami cried out: “How fortunate I am to meet such a handsome young man.”

IZANAGI: “Izanagi replied: “I am the man. I should be the first one to speak. We should walk around the island again.”

FEMALE NARRATOR: “The two of them set off once more and came face to face again.”

IZANAGI: “How fortunate I am to meet such a beautiful girl,” the man cried. “What is your body like?”

IZANAMI: “A part of my body is the source of all womanhood” she replied.

IZANAGI: “My body has a male part”, Izanagi added. “It would be good if we were to be as one”

FEMALE NARRATOR: “The god and goddess became man and wife and lived happily on the island. They decided to create a country with eight different islands. Then they spoke in chorus:...”

IZANAMI AND IZANAGI: “We have already created a great country with eight islands, mountains, rivers, plants and mountains. Why don’t we create a ruler for the world?”

MALE NARRATOR: “And so, the two gods gave life to the sun-god, who was sent out to control the sky. And the splendor of this child illuminated the entire universe.”

Turn to your right and read the next part of tour in front of the kneeling woman inside the curve.

AUDIO GUIDE: The Burial

Voices: *Narrator*
 Young Neanderthal Woman

NEANDERTHAL WOMAN: *(thinking out loud, monotone voice)* “No more life in

your body, my brother. Now you lie in the earth. Yes, the bison is strong and fast. Its horns are as sharp as a knife. They can cut deep into you. Your body was bleeding. The old woman spread plant sap on your wounds. This time it did not help. The others have made a grave for you. Your clothing was torn. Keep it on, brother, I will sew it back together. We have sung and danced, and the water came into my eyes. Today we will move on, following the river. There are wild horses in the blue valley. You will remain here.”

NARRATOR: “For a long time people doubted whether the Neanderthals were so sensitive in the way they dealt with death, whether they buried their dead. But now we know of over fifty graves. Containing the skeletons of men, women and children. On some of the bones - including those found here in the Feldhof Cave - scientists have identified strange cut marks made by sharp stone tools. Were some of the Neanderthals cannibals? Did they perhaps have a ritual whereby their flesh was liberated from the bones before final burial? We do not know. Nor do we know whether the Neanderthals always buried their dead in the ground. Some may have been laid to rest in trees, in lakes or in crevices among the rocks.”

Walk over to the red “Wendel Collection”, and then further to the six stone pillars. Read the next audio tour chapter, “Western Religions” and “Eastern Religions” when you have reached the banners and engraved plates behind the pillars.

AUDIO GUIDE: Western Religions

Voices: *Narrator*

NARRATOR: “There are worlds of difference between Judaism, Christianity and Islam. And yet the three religions share the same roots. In many cases they cite the same primordial parents and prophets. Anyone comparing the Bible with the Koran - the sacred book of Islam - can’t help noticing the similarities. For example, Islam recognizes Abraham, Noah and Jesus as orthodox religious figures. They had, it is argued, laid the groundwork for the teachings of Muhammad.”

(Recording from a religious ceremony with prayers of the apostolic creed: “I believe in God the Father, the Almighty, the Creator of Heaven and Earth. In his only begotten son, our Lord...”)

NARRATOR: “Like Christianity, the Jewish and Moslem faiths recognise one deity

only. Islam champions the idea of a single god most vehemently, refusing to accept either Jesus or the Holy Ghost.

As history shows, the major religions have never concentrated exclusively on matters of faith. As a result they have always played key roles in cultural and political life. For example, Christianity is the platform on which Western civilisation was built. Christian principles have largely shaped our ethical, legal and social systems.

For a long time the Church and State were inextricably linked. During the Middle Ages, emperors were crowned by the Pope. Christianity was the official religion. When it came to spreading the word, neither Christians nor Moslems were averse to drastic methods. If need be they even waged war in their cause. Nowadays the powers of church and state have been separated in Western countries. The governments no longer prescribe a single religion, preferring to guarantee freedom of religion.

The situation is quite different within the Islamic sphere of influence. In many countries with largely Moslem populations, Islam is the state religion. In Saudi Arabia, for example, some very specific precepts from the Koran have been incorporated into national legislation. The punishment for non-compliance is taken from Koran rules on criminal behaviour.

By comparison Indonesia - the most populous Moslem state - has a far less strict approach to Islam. The Pancasila, the country's constitutional charter, merely requires that people believe in a god - the religion is not specified. Today Islam is one of the few major religions whose congregations are growing."

AUDIO GUIDE: Eastern Religions

Voices: *Narrator*

NARRATOR: "The view of life as an eternal cycle of growth and decay is central to major Eastern religions. The notion of an almighty God typical of Western faiths is completely foreign to them. There is no Creator or Saviour in Buddhism. Nor are there any severe commandments. People are left to find their own path to religion. The founder of the religion, Buddha Gautama, preached that life is synonymous with suffering. Suffering is rooted in greed, hatred and ignorance. Buddha, the "Enlightened One", showed man the path to redemption."

(Buddhist monk, praying)

*As a huntsman roaming free
As a huntsman roaming free*

WOMAN: "And what about the women?"

MAN: "Well if you ask me, I don't think the women were strong enough to hunt. The simple fact is that men were responsible for bringing home the bacon back then too."

WOMAN: "What makes you think that? The women picked fruit and plants. And that was the staple diet, the food families could rely on getting. And women could hunt as well."

MAN: "How do you know?"

WOMAN: "Well that was the case with other so-called "primitive" peoples. Like the Indians and Eskimos. For instance, the Ojibwa in North America took their daughters out hunting. And there were women among the Inuit Eskimos who learned to pursue prey as soon as they could walk. I've no doubts at all that Neanderthal woman hunted with the best."

NARRATOR: "When we talk about hunting, we think of speed, stamina and courage. Hunting is seen as man's domain. We don't know whether the roles were really divided up that way among the Neanderthals. But we can be absolutely sure that the powerful Neanderthal women were physically equipped for this task."

Hunting had become a driving force behind human development long before the Neanderthals. It is inextricably linked to the emergence of language. After all, how else could the hunters agree on tactics?

In spite of this, plants and trees remained the main source of nutrition - particularly in warmer regions with rich vegetation. Plants had one undisputed attraction: they couldn't run away. However, meat was an indispensable source of nourishment in cooler parts of the world. The collections of bones found in Neanderthal campsites bear testimony to this.

The Neanderthals were already able to harness their environment to their own ends. But *Homo sapiens sapiens* refined these skills still further. Long-term planning and considerable experience were needed if people were to be in the right time at the right place - to reap the richest harvest or corner the best quarry. Having to constantly pick food or hunt animals may seem arduous to us

today. But studies of the last of these peoples show that a few hours a day are usually adequate to feed a family. So what made people change? What tempted them to give up this traditional lifestyle and settle in permanent communities? We cannot say. Indeed, we may never know.”

The next chapter of the Audio Guide awaits you in the upcoming right turn, in front of the elderly lady and her grandchild.

7. Communication and Society

AUDIO GUIDE: Old woman with child

Voices: *Grandma*
 Granddaughter
 Narrator

GRANDDAUGHTER: “Grannmaaa, what are those two people doing?”

GRANDMOTHER: “The old woman is explaining something to the girl. Maybe she’s telling her about the bison trails. Bison were important back then. If the Neanderthals killed one, they had meat to eat for days on end. And they could use the thick hide to make clothes and tents.”

GRANDDAUGHTER: “But how does the old woman know which trails the bison took? Granma’s don’t go hunting, do they?”

GRANDMOTHER: “They don’t indeed. And Neanderthal grandma’s probably didn’t either. But grandma’s notice lots of things. You can be sure that she went hunting when she was younger. And she knows the mountains and valleys where her people roam like the back of her hand. She knows everything about her family history, for example that her great-great grandparents originally came from the South, crossing the mountain range on their way North. And she knows which plants can heal diseases; she knows how to make tools, tan leather, treat wounds, light fires. She can find her way around in the wilderness. And find her way back to the places that provide safe shelter.”

GRANDDAUGHTER: “Does she know more than you?”

GRANDMOTHER: “Maybe. It was certainly important that she knew a lot. Because the Neanderthals couldn’t write anything down. People only learned to write 5,000 years ago.”

GRANDDAUGHTER: “And what happened when the old woman died?”

GRANDMOTHER: “By then, she’d already passed on everything to her children and grandchildren. The Neanderthals didn’t usually live very long. Forty years, if they were lucky. Very few got really old. Maybe they reached 60.”

GRANDDAUGHTER: “So old people were really special back then.”

GRANDMOTHER: “Right you are! They were especially experienced and especially rare.”

NARRATOR: “For a long time, scientists couldn’t agree on whether the Neanderthals could speak as well as we can. By studying Neanderthal skulls they tried to reconstruct their throats and the positions of their tongues. Both of these are important for articulation. The tongue-bone found at the Kebara cave excavations in Israel supplies a new piece in the puzzle. Its shape is very similar to that of modern man. Today there can be little doubt that Neanderthal man could speak like we do.”

Behind the next turn and the “*Forscherbox*” (Researcher’s Box), you will find a showcase with skulls and a brain. Read the next text of the audio guide when the display beside shows the title “*Frühgeburt Mensch*” (A premature infant: the Human child)

AUDIO GUIDE: A premature infant: the Human child

Voices: *Narrator*

NARRATOR: “The successful nurturing of offspring is decisive for the continued existence of a species. The longer this brood care takes, the closer the relationship between parents and children becomes. As the intensity of the parental care increases, so the learning potential of the offspring grows as well.

In the animal kingdom, a distinction is made between two basic behavioral patterns amongst young animals: precocial and altricial. Many fish, amphibians

and reptiles are extremely precocial. The brood care ends with the laying of the eggs in a protected area. The newborn hatch independently and fully developed, from the egg. Whilst they are completely self-dependent they now become an easy prey for other animals. Only the great quantity of the offspring guarantees the survival of the species.

Many rodents and predators are truly altricial. For example: mice, just like their greatest enemy - cats, are born completely helpless and require intensive care from the mother at first.

Hoofed animals are considered a secondary precocial species. Foals or calves are born fully developed and can, after a short period of time, join the roaming herd. Unlike tortoises however, a tight relationship is maintained between the mother and the child.

Chimpanzees, our closest living relatives in the animal kingdom, are also amongst the secondary precocial species. They are born after a long pregnancy which lasts 7-8 months. A long and intensive relationship develops between mother and child. The baby is breastfed for approximately 3 years and becomes grown-up between 7 and 9 years. Directly after birth the chimpanzee baby is already able to actively hold onto the mother's fur – a decisive advantage for the entire group, which can continue to roam about unhindered. After half a year it can walk independently. During this long period of intensive parental care, chimpanzee children learn many behavioural patterns from their mothers.

Us humans belong to the secondary altricial species. Human babies are completely helpless during birth and even have to be carried. The human brain experiences rapid growth after birth. Initially the brain weighs approximately 250 grams. By the end of the first year it already weighs 750 grams, and is already distinctively bigger than that of a grown-up chimpanzee. By the fifth year the weight reaches approximately 1.300 grams, as much as the brain of a grown-up. However the development of the brain is nowhere near complete by the fifth year. Together with its weight, the number of synapses of the child's brain also grows. A grown-up human today has approximately 100 billion of these circuits. A baby reaches this number after only 2 years. One year later it already has 200 billion circuits.

The enormous amount of synapses in the infant phase showcases the exceptional aptitude and adaptability of the human child. During this stage the brain is approximately twice as active as that of a grown-up. The neural pace however, is still significantly slower – no fixed circuits have developed yet. At this point in time the brain is extremely mouldable and adaptive. The number of

synapses remains constant up until the 10th year. Afterwards less frequently used circuits degenerate until the typical quantity of a grown-up is reached. This exceptional aptitude for learning makes it possible for the parenting group to steer the development of the child – this alone is how education becomes possible. The basic behavioural patterns of human coexistence and the specific characteristics of every culture can, in this way, be learnt by the child. This “cosmopolitanism“ of the human child, its mouldability by its surroundings, creates the basis of the human success story and is the cause for the highly visible diversity in human culture.”

Follow the path onward. You will see our Neanderthal girl "Kina" grinning at you impishly and inviting you to discover something about the life of a child in the Stone Age.

AUDIO GUIDE: Kina

Hello, my name's Kina.

It's nice of you to stop by. Here at the top of the museum it sometimes gets a bit boring on my own. Do you like to visit museums or do you like to play outside with your friends?

In the Stone Age, where I live, there are no schools, museums, swimming pools or amusement parks. But my friends and I can play outside all day. My mother always says that I shouldn't go anywhere on my own, that I should always go with my big sister or my cousins. There are no cars driving around here, but it can still be dangerous.

We climb and run around a lot. Once, I slid down a small slope and sprained my ankle. It really hurt and I couldn't stand on it properly. Luckily I was with the others and they helped me walk so I could limp my way home. Mama and Grandma quickly fixed my ankle. I love them both so much. Grandma and Mama know sooo many things. Mama knows lots of fun games and she is a very good hunter. She's brave and she watches the herds of animals very closely so that we can be successful when we hunt. Grandma shows me lots of useful things, like how to make skins nice and soft and how to make beautiful clothes from them.

Grandpa isn't so fit anymore, but he's always there for us and spends lots of time with us kids. And he knows the best tricks - like to how to annoy Papa! We laugh a lot together and like Grandpa a lot. We make sure he has enough to eat and drink and help him when he wants to get up, because he can't do it so easily by himself anymore. When he was younger he showed Papa how to make sharp

blades out of flint and good wooden spears for the hunt. I try to make blades too, and use my flint knife to sharpen sticks. I use the sharpened sticks to practice catching fish in shallow water. Sometimes we kids are allowed to watch the hunt from a safe distance. It's very exciting but also dangerous. We collect berries, mushrooms and delicious honey. When we sit around the fire with the whole tribe in the evening, the elders tell exciting stories. It's nice and warm next to the fire and sometimes I fall asleep, snuggled up with Mama, while I'm listening.

I really hope that you will visit me here again. Have fun on the rest of your visit to the museum!

You have reached the end of the audio tour through the Neanderthal Museum. If you follow the path further, stop in at our cinema. There you can finish up your visit to the exhibition by watching interviews about life's great questions. We hope that you have enjoyed your visit to the Neanderthal Museum and look forward to seeing you next time you visit us!