

MAGAZINE

of Heinrich Heine University Düsseldorf

Reducing food spoilage

HHU biologists delay
plant senescence

COMMUNICATION SCIENCE

What do you
think about AI?

ECONOMICS

Art and the
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LAW

Constitutional
courts are changing

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PHOTO EM PROF DR KLAUS KOWALLIK

Living fossils can be found growing largely unnoticed on the campus between the University and State Library (ULB) and building 25.02.



PHOTO TIZIAN MACHTOLF

Biochemists at HHU have developed a method for slowing down the ripening of fruit and vegetables.

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Editorial



Dear Reader,

Halting the ageing process, or at least slowing it down, is a long-held dream of humankind and a theme often found in fiction and art. Yet it is also of interest to science and currently the subject of a concrete research project being conducted at Heinrich Heine University. Although the focus here lies not on human ageing but on the ageing process of fruit, vegetables and flowers, the findings and discoveries will ultimately benefit us all – for example if they can succeed in making the food sector more sustainable by extending the shelf life of food products. This fascinating project at the Institute of Biochemical Plant Physiology is the title story in this issue of the HHU Magazine and highlights how research can influence all our lives.

Reports from the other HHU faculties also illustrate how closely research and society are linked: For example, the project being carried out in the Faculty of Arts and Humanities into how people perceive artificial intelligence – an area in which intensive work is being conducted at HHU – and into what fears and hopes they associate with AI. Or the health services research being carried out at the Centre for Health and Society at HHU, which is contributing to a greater focus on the needs and perceptions of patients in disease therapy.

Other stories in this issue look at the often-underestimated role of constitutional courts and the question of whether and how art and market mechanisms can be reconciled. A further article presents four rare species of trees on the campus, illustrated with attractive photos. Perhaps you will see it as an invitation to visit the HHU campus and seek out these trees – at the latest in the spring when the pandemic and weather situation will hopefully allow campus life to be more active again.

I wish you an enjoyable read!

Kind regards,

A handwritten signature in blue ink, which appears to be "Stefan Marschall". The signature is fluid and stylized, with a long horizontal stroke at the end.

Professor Dr. Stefan Marschall
Vice President for International Relations and Science Communication

Success for Düsseldorf in the World University Rankings

HHU among the top 18 per cent worldwide in the “THE” ranking list



In September, Heinrich Heine University jumped straight into the top fifth of one of the most important international ranking lists: In the “Times Higher Education World University Rankings 2022” (for short: THE Rankings), HHU appears in the ranking group “251 – 300” out of 1,662 universities from almost 100 countries. HHU participated in the well-known ranking list for the first time this year.

The THE Rankings take account of a balanced mix of indicators from the areas of research, teaching, citations, industry income and international outlook, enabling the renowned, London-based Times Higher Education (THE) magazine to offer an international benchmark based on

the best institutions in the world. Universities from 99 countries and regions took part in the current rankings for 2022.

The internationally established ranking list is considered the world’s most important university ranking compiled exclusively on the basis of the active involvement of the universities themselves. Professor Dr Stefan Marschall, Vice President for International Relations and Science Communication, is delighted at the news: “The fact that the HHU, as a public university, ranks at the top of the world list indicates our academic excellence and international focus in research and teaching. This success shows that HHU need not shy away from international comparison.”

HHU ranks particularly highly in the “Citations” score (academic quotes and references to HHU). This statistic indicates how frequently the findings and ideas of a university have been cited globally in the past six years and thus how widely the university is known on the international stage.

A.Z.

Rare trees on the campus

A number of trees can be found growing largely unnoticed between the University and State Library (ULB) and building 25.02. Now fine specimens, they were planted back in 1975 on the initiative of the geologist Professor Dr Wolfgang Schirmer, former head of the Geology department at the Institute of Geography. Brought together in this small space on our campus are four different types of living fossil trees which defined the appearance of the northern hemisphere in the Tertiary, i.e. the era following the extinction of the dinosaurs 65 million years ago. Living fossils, which have not undergone any significant morphological and anatomical change compared with their ancestors, provide valuable historical evidence as well as an insight into past vegetation periods and thus also climatic periods.

DR KLAUS KOWALLIK, RETIRED PROFESSOR OF BOTANY, PRESENTS THESE FOUR GIANT TREES ON THE FOLLOWING PAGES.

The tree most likely to be noticed in passing is the densely branched, pyramid-shaped specimen near the ULB. Widespread across the northern hemisphere in eras gone by, today only a few specimens remain in the high Sierra Nevada in California. Botanists class this tree as a living fossil as it has remained virtually unchanged for around 40 million years. By contrast, the majority of species that exist today have only come into being over the intervening millennia, while numerous species that existed back then have long since died out. Generally known under the common name of giant sequoia, its scientific name is *Sequoiadendron giganteum*. Reaching truly gigantic proportions in California, a small number of trees that managed to escape brutal destruction by loggers for railway sleepers and planks for the construction of accommodation from 1845 onwards now reach heights of more than 80 metres and have trunks with a circumference of more than 30 metres and a diameter in excess of eight metres. Among them is the world's largest tree, known as the General Sherman Tree, which is estimated to be more than 2,500 years old. It was named after a disputed but ultimately victorious Union general in the American Civil War.

Giant sequoia
Sequoiadendron giganteum



Seq. gig., branches covered with overlapping needles and cones from the previous and current years



Seq. gig., trunk with soft, fire-resistant fibrous bark

California redwood

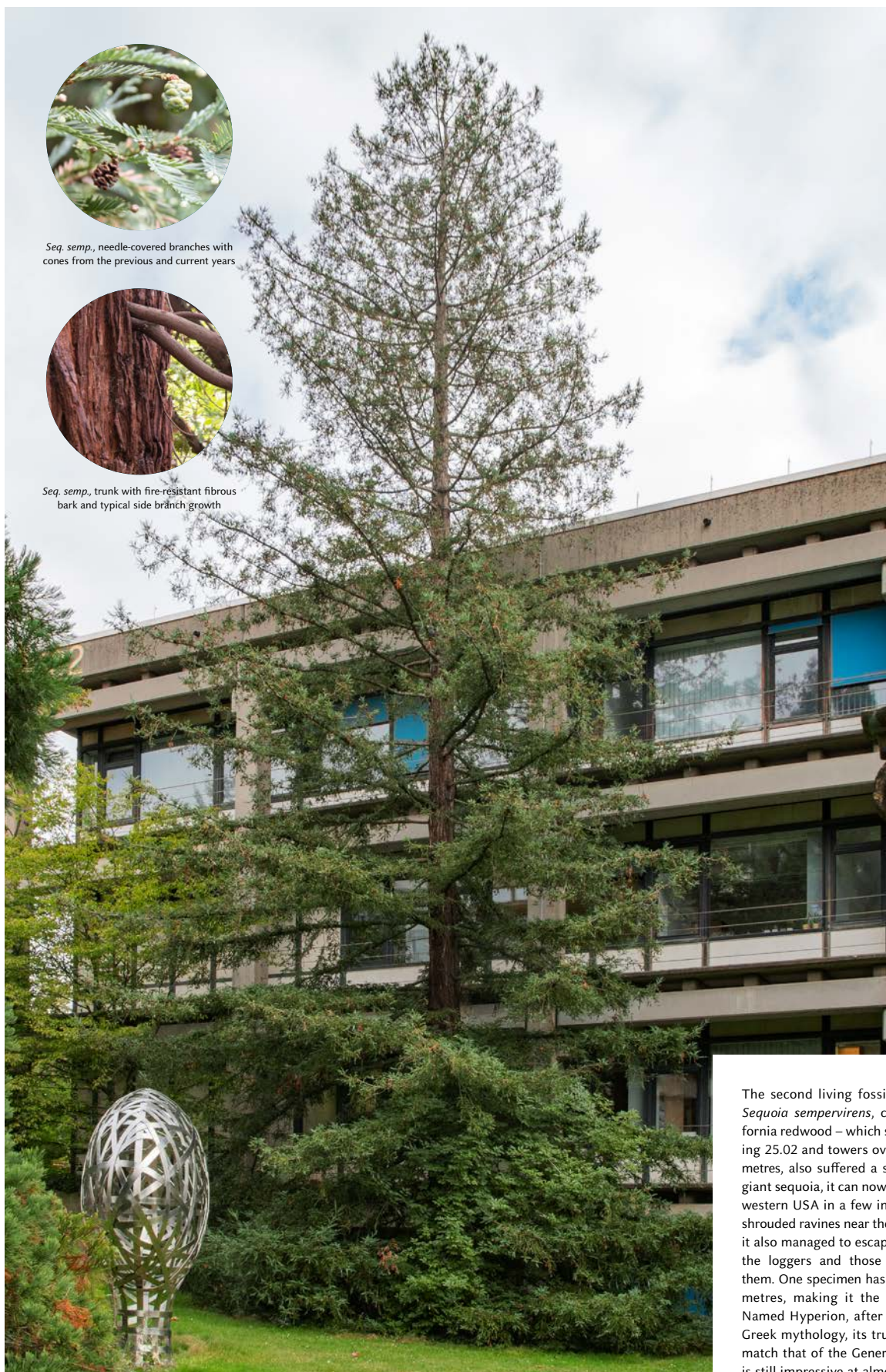
Sequoia sempervirens



Seq. semp., needle-covered branches with cones from the previous and current years



Seq. semp., trunk with fire-resistant fibrous bark and typical side branch growth



The second living fossil – scientific name: *Sequoia sempervirens*, common name: California redwood – which stands close to building 25.02 and towers over it by a number of metres, also suffered a similar fate. Like the giant sequoia, it can now only be found in the western USA in a few inaccessible and mist-shrouded ravines near the Pacific coast, where it also managed to escape the exploitation of the loggers and those who commissioned them. One specimen has a total height of 115 metres, making it the world's tallest tree. Named Hyperion, after one of the titans of Greek mythology, its trunk diameter cannot match that of the General Sherman tree but is still impressive at almost five metres.

The third living fossil stands directly adjacent to the California redwood by building 25.02. This tree was also widespread in past geological epochs but was only known to science in the form of fossilised imprints of branches, needles and cones until 1941, when it was discovered in a forest in a remote part of Central China. Scientists disagreed over how it was related to other species of cone-forming conifers for a number of years and it was not until after the end of World War Two that American botanists proved the specimens were the last living examples of the primeval tree already known as *Metasequoia glyptostroboides*, which was long thought to be extinct. So it is hardly surprising that this tree, which can now be found worldwide thanks to propagation from the few remaining specimens, is known as the dawn redwood.

Metasequoia glyptostroboides
Dawn redwood



Met. glyp., branch ends with long shoots, already displaying the buds for next year's spur shoots. This year's spur shoots above exhibit the typical opposite needles



Met. glyp., trunk with typical longitudinally grooved bark

Bald cypress

Taxodium distichum



Tax. dist., branch tips with this year's cones and spur shoots with alternate needles



Tax. dist., side branches and bark



The five large specimens of the fourth primeval giant that can be found close by look very similar to the dawn redwood. Known as the bald cypress (*Taxodium distichum*), this tree is usually found in swampy locations in Florida, southern Texas and the Mississippi delta. Fossilised examples of this tree have also been found in lignite deposits from the Mid and Late Tertiary. Fossilised relics of bald cypress trees from the Upper Triassic period 225 million (!) years ago can be found in the Petrified National Park in Arizona. Thanks to its exotic appearance, *Taxodium distichum* was a coveted addition to English-style gardens from the mid-19th Century, meaning that this tree with its characteristic respiratory roots can almost always be found in landscape parks with collections of mature trees. By contrast with the evergreen giant sequoia and California redwood, but in common with the dawn redwood, bald cypresses shed their spur shoots and needles in the autumn. As such, they are similar to our native larches, although the latter actually only shed their needles and regrow them in spring. Despite their preference for wet habitats, bald cypresses are not exclusive to such environments and also thrive on the drier ground by the ULB.

A summer evening at HHU

Three-dimensional and no problem with the webcam: Staff and students from Heinrich Heine University met up for a laid-back, open-air exchange on 25 August 2021. In small groups, they strolled through the Botanical Garden, enjoying the natural environment and the spiritual, acoustic and culinary surprises on offer.

PHOTO JÖCHEN MÜLLER



Let's be
honest:

What do you
really think

about artificial
intelligence?

BY ESTHER LAUKÖTTER

If you believe the media, the mere mention of artificial intelligence (AI) provokes concern or even fear in many people. Others associate it with great hope and progress. To ensure the debate is defined by facts rather than speculation, Heinrich Heine University has launched a partnership with the Center for Advanced Internet Studies (CAIS) – which is to be expanded into a research institute from April 2021 – to research the largely unknown answer to the question: What do people really think about AI?

It is often assumed that people who are not involved in the experts' debate do take the time to think about technologies like AI and are generally interested in them. Whether this is actually the case may depend on their personal experience and prior knowledge of the technology. Do I come across AI in my day-to-day life? What influence does AI have on my way of life? Many people do not ask themselves these questions. Yet it is important that society addresses the topic of AI. If what is being said about the potential for innovation and influence of AI is true, it could affect every area of life in the future.

Together with his team, project leader Professor Dr Frank Marcinkowski from the Communication and Media Studies department at the Institute of Social Sciences has developed an instrument to enable the systematic observation and tracking of public opinion and media reporting on artificial intelligence: The Artificial Intelligence Opinion Monitor – known as MeMo:KI for short after its original German title.

Regular monthly poll

At the heart of the project is a monthly survey aimed at determining public sentiment about AI as little research has been conducted on this to date. "Are you more for or against the use of AI in political decision-making?" or "Do you think AI offers more risks or benefits to society?" Together with a number of others, these questions have been posed to 1,000 randomly selected people forming a representative cross-section of the German population aged 18 and over every month since May 2020. The consistent format of the questionnaire permits long-term analyses and makes it possible to observe changes in sentiment.

A second focus of the project is the monitoring of media reporting about AI. "We are examining over 30 of the most widely read print and online media offerings in Germany using a standardised media content analysis. We are particularly interested in the contexts in which AI is mentioned and whether the articles focus more on the benefits or risks. Consequently, we can not only report how many articles have been published, but also provide additional

Gathering tweets

insights into which topics have been particularly widely discussed each month – or even which are rarely mentioned," says research associate Kimon Kieslich. The project is also investigating the question of whether the debate in the mass media corresponds to that in a "bubble", i.e. a group of experts and other people who are particularly interested in the topic. Kimon Kieslich is currently gathering thousands of tweets about AI which will be processed into network graphics in the future to round out the view of the debate and its participants.

Decision-makers tend to offer a personal interpretation "of public opinion" to strengthen their own position. This can have far-reaching consequences for the use and shaping of AI, for example where public money is spent on funding AI research or training for citizens on the basis of a feeling. As an alternative to anecdotal knowledge, MeMo:KI offers a sound data basis covering interest in AI, relevant opinions and intended behaviour. Systematic and continuous observation not only of public sentiment, but also journalistic reporting thus also indicates: In what light is AI being shown? What scenarios for use of the technology are being developed and by whom? Instead of relying on assumptions, the data from the ongoing monitoring provide reliable orientation. "From the point of

view of research, we are providing an instrument for the self-observation of society during its debate about the technology,” says Professor Dr Frank Marcinkowski. He notes that, by contrast with other topics such as climate change, there is comparatively little debate about AI and that it is quite one-sided.

(Too) little awareness?

The results are ultimately made available to the public in an interactive dashboard on the CAIS website. Coloured bars indicate how people view the technology in various application areas. “We can observe that the use of AI in industrial production or other high-tech areas like the transport sector is rated more positively than in areas such as the courts or politics. All-in-all, however, we cannot see either blind trust in AI or the oft-quoted panic or fear of super-intelligence in our data,” says Pero Došenović, who is a research associate in the project. One statistic particularly stands out: 51.3 per cent of those surveyed stated that they are not really interested in artificial intelligence. “One consequence of this could be that awareness of news reports about the potential for discrimination or other ethical issues with regard to AI will be low,” Došenović continues. Whether this will change in the next two years is something that no-one in the project team is willing to predict, but they will certainly be providing a reliable supply of data: The project will be funded by the Mercator Foundation until March 2024 and will continue to observe public and published opinion during this time.

In addition to the regular surveys, various special surveys are also being conducted. “We have gathered data throughout the coronavirus pandemic and they show for example that, in times of social crisis, AI technologies can expect to enjoy greater acceptance than in normal times,” says Došenović. Data were gathered during the recent elections to the federal parliament and the research team

was also able to provide prompt data in the context of the natural disasters in July: “How much of a contribution do you think artificial intelligence can make to limiting the consequences of natural disasters?” 47 per cent of respondents believed that AI can make a large or very large contribution. By contrast, however, they are less optimistic when judging the handling of the coronavirus pandemic (33 per cent) or the possibility that AI can reduce the gap between rich and poor. In the latter scenario, only 20 per cent of respondents think AI can help solve this problem.

Publishing results

One important project goal is to make the data and results available to the public. To aid understanding, topic-focused fact sheets will be published which could be of particular interest to journalists as they can offer figures to back up assumptions about public opinion. Opportunities are also being created for on- and offline networking between representatives from politics, the media and civil society via a range of event formats. For example, the MeMo:KI team hosted a panel event at re:publica and made a guest appearance at a “Digital Strategy NRW” live event.

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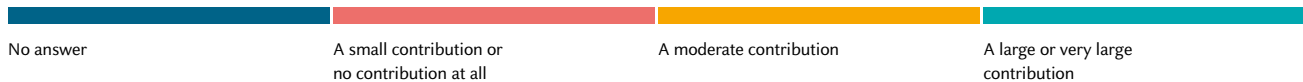
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“From the point of view of research, we are providing an instrument for the self-observation of society during its debate about the technology.”

Professor Dr Frank Marcinkowski – Communication Studies expert

Contribution of artificial intelligence...

1,028 respondents



...to handling the coronavirus pandemic

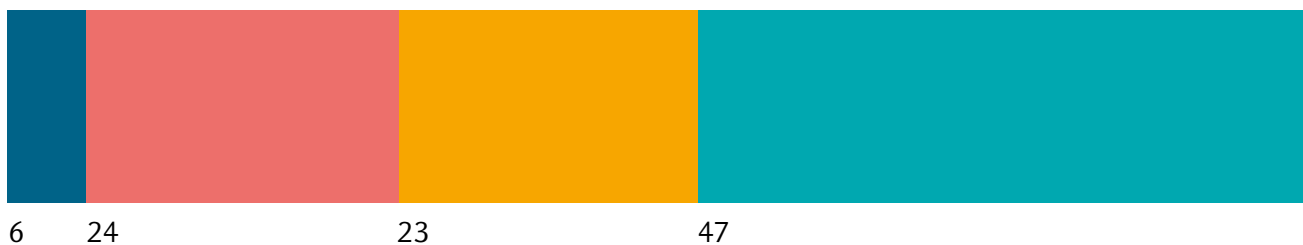
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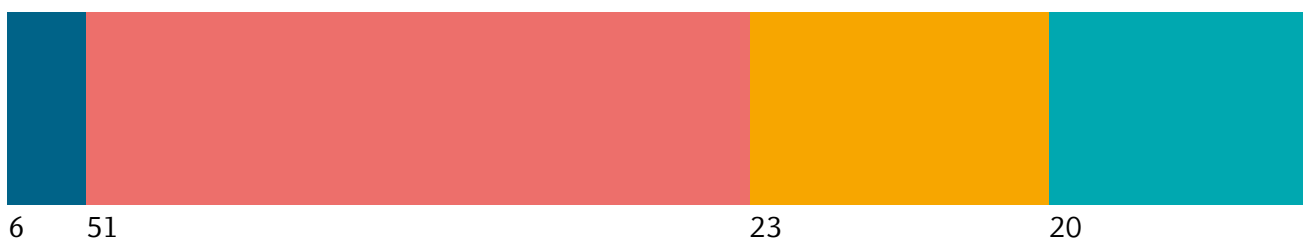
...to combating climate change



...to limiting the consequences of natural disasters



...to reducing the gap between rich and poor



Reducing food spoilage

HHU biologists delay
plant senescence



BY ARNE CLAUSSEN

Slowing down the ageing process is possible – at least in fruit, vegetables and flowers. Here, the plant hormone ethylene plays a crucial role in various processes and, among other things, controls plant senescence. The team headed by biochemist Professor Dr Georg Groth (Institute of Biochemical Plant Physiology) has developed a novel method for slowing down plant ageing processes via a small and simple molecule. Their discovery could have a large economic impact for the food industry.



PHOTOS TIZIAN MÄCHTOLF

The biochemist Professor Dr Georg Groth, Institute of Biochemical Plant Physiology

When putting bananas next to apples in the fruit bowl, the bananas will ripen much quicker than usual and turn brown. “This is because apples emit a significant amount of the gaseous molecule ethylene, which bananas absorb through their skin and which accelerates the ageing process,” explains Professor Groth.

Controlling ripening to ensure the shelves are always filled with fresh fruit

This fact is widely exploited by fruit exporters: Bananas are harvested in their country of origin while still green and unripe, before they are shipped worldwide. Shortly before these bananas are to be sent to green-grocers and supermarkets they get treated with ethylene in sealed storage rooms until they have reached the desired level of ripeness. This means that a shipload of bananas can be supplied to consumers in batches to meet consumer demand on an ongoing basis over a longer period of time.

Yet not only bananas are influenced by the plant hormone ethylene. It can be found throughout the world of flora and influences a variety of processes. For example, it controls plant response to environmental stimuli or

the dropping of the foliage from the trees in the forest. The ripening process is also key for plant propagation as the seeds also ripen in the fruit and are only released when a ripe fruit falls from the tree and decomposes.

Groth says: “Consumers do not only want to eat fruit just after it has been harvested, but rather all year long if possible. Of course, they would further prefer that the fruit in the fruit bowl or the bouquet of flowers in the vase do not start to decay or wilt immediately after purchase.” This is why the Düsseldorf-based researchers have carefully scrutinised the ripening process and found out how it can be controlled and slowed down.

In the plant cell, ethylene docks at the receptors that are localised in the so-called endoplasmic reticulum near the nucleus of the cell. This process triggers a signalling cascade, at the end of which specific genes in the nucleus of the cell are activated, which in turn results in the production of proteins that control ripening.

“NOP-1 is a natural substance that can be sustainably produced.”

Professor Dr Georg Groth – biochemist



Test series on roses at different days after harvest. The flowers at the front were treated with NOP-1, while those at the back are the untreated control group.

The wilting process in carnations





“All plants with climacteric fruit which, in addition to apples and bananas, for example also include avocados, pears, mangos, melons, kiwi, papaya, plums, peaches or lemons, should respond similarly to the plants we have already tested – even strawberries, which are highly sensitive to ethylene.”

Professor Dr Georg Groth – biochemist

“We wanted to look at this signalling pathway right where it starts,” explains Professor Groth. His team discovered that a protein called EIN2 from the ethylene signalling pathway can block the pathway by interacting with the receptors. It docks to the receptor protein and changes it in such a way that ethylene is still able to dock but no longer has an effect. Groth says: “What exactly happens in this process, i.e. whether the structure of the receptor is changed due to binding of ethylene and/or EIN2, is still under investigation.”

Cooperation with chemists at HHU

However, it is clear that only a very small part of EIN2 – comprising only eight amino acids – is sufficient to achieve the observed effect. This small segment, called NOP-1, can be chemically synthesised and this has also been achieved at HHU: The working group headed by the chemist Professor Dr Laura Hartmann has been able to produce small quantities of the material with various modifications.

For controlled experiments, it is important that the plants and fruit tested have not been treated with other chemicals. Groth’s team have therefore obtained tomatoes, apples, roses and carnations from specialist growers from the Netherlands and treated them with NOP-1. “We actually also wanted to test asparagus, but the related experiments had to be postponed by a year due to supply difficulties caused by the coronavirus epidemic,” explains the biochemist.

Small quantities of NOP-1 are sufficient

The results are highly promising – even tiny amounts of NOP-1 are sufficient to have a significant influence on the ripening process of the plants tested so far. Depending on the type of plant, just one dose was sufficient to delay the process by six to ten days. Professor Groth comments: “All plants with climacteric fruit which, in addition to apples and bananas, for example also include avocados, pears, mangos, melons, kiwi, papaya, plums, peaches or lemons, should respond similarly to the plants we have already tested – even strawberries, which are highly sensitive to ethylene.

The fact that NOP-1 is water-soluble is of great advantage as the active substance can simply be delivered to flowers by watering or to fruit and vegetables by spraying.



Preparing a wilting experiment involving NOP-1

The advantages of delayed ripening are obvious: If this process can be controlled in a targeted way, plant products can be transported and stored more easily before being brought to the consumer. And if they remain fresh for a longer period at home, more fruit and vegetables will be eaten and less wasted, which in turn means that less food has to be produced. Likewise, a bouquet of flowers will bring joy for longer if wilting is delayed by a week.

A longer shelf life for greater sustainability

It is conceivable that one day a small sachet containing NOP-1 will be provided with every bouquet of flowers purchased so they stay fresh for longer. “The sachets provided with bouquets today often contain

compounds that include heavy metals, such as copper or silver, which are harmful to the environment. By contrast, NOP-1 is a natural substance that can be sustainably produced,” Groth emphasizes. It could be produced in a biotechnological and thus eco-friendly process by microorganisms such as bacteria or yeasts. With its bioeconomic research network BioSC (Bioeconomy Science Center), North Rhine-Westphalia offers optimum conditions for such research and BioSC partners from the University of Bonn, RWTH Aachen University and Jülich Research Centre have been involved in the research.

Due to the clear commercial potential, the HHU researchers are considering starting their own company or working with existing companies. “However, before a product treated with NOP-1 is offered to consumers, there are a number of aspects that still need to be investigated,” says Professor Groth. These include how to use the substance most effectively, when in the ripening

“If we succeed in bringing our substance to market, it would be an important step toward greater sustainability in the food sector.”

Professor Dr Georg Groth – biochemist

process it has to be applied and whether multiple applications are even more beneficial.

There are also toxicological and allergological aspects: Even though NOP-1 is a component of the larger protein EIN2 that occurs naturally in every plant, it is essential to find out whether a fruit treated with this substance can cause unwanted side effects. The first step here would be to test the compound on cell lines before living organisms consume fruits that are treated with the substance.

There is also the question of how consumers will react to the different prices for fruit, vegetables or

flowers: How much is a longer shelf life worth to us? Groth says: “From that point of view, application of NOP-1 on expensive food such as asparagus, strawberries or avocados seems appropriate as an assumed price increase of several cents is less critical here than it is for low-price, mass-produced food products

Adapting commercial cycles

such as tomatoes.” And finally, it will also be necessary to adapt commercial cycles to NOP-1: The substance has to be applied to plants and employees have to be trained in how to do this; depending on the application scenario, greater storage capacities may also be required.

“If we succeed in bringing our substance to market, it would be an important step toward greater sustainability in the food sector,” Professor Groth believes. “We know that a number of questions need to be answered beforehand, but we are looking forward to meeting these challenges.”

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The research team at the Institute of Biochemical Plant Physiology

How art finds its way onto the market



The “Art Mediation and Cultural Management” study programme at the Start Art Week

BY VICTORIA MEINSCHÄFER

What do Jeff Koons, Damien Hirst and Takashi Murakami have in common? The three contemporary artists all create highly financially successful art. Do they create particularly good art? Valuable art? And is the art created by others really not as good, is it consequently worth less?

Dr Julia Römhild, Academic Councillor for Cultural Management, suspects that the prices for the artworks are not determined solely by the art itself. “All three are similar personalities and willing to market themselves as well as their art.” Her student, Evfrosiniya Bumazhnova, focused on exactly this type of artist personality in her master’s thesis in Art Mediation and Cultural Management around a year ago. Here, Bumazhnova sees “the artist as an entrepreneur whose financial success serves not only as proof of the artistic quality of their work, but in some cases even seems to justify and define its aesthetic value.” Yet this is not a new development. Römhild points to Cranach who, during the Reformation, ran a successful workshop and became wealthy through his sales. “And today no-one would say: ‘That’s not art because he could make such a good living from it.’” Despite this, she can still observe a reluctance among artists to market themselves. The marketing expert then seeks to clarify that marketing for art does not in any way mean that the art itself should be tailored to market demands. “It’s marketing in that moment when you attract attention and that was planned.” In other words: Create art and then publicize it

so that gallery owners, curators and potential buyers see and talk about it. “Art must not be allowed to become subordinate to market mechanisms, it’s not about creating art

that is suitable for marketing,” the expert states. “But once the artwork is finished it can and should be brought onto the market in a targeted way.”

What can self-marketing achieve?

Getting this message across to young artists was one of the aims of the Start Art Week, which took place in Düsseldorf in early October. Under the patronage of the city mayor, Dr Stephan Keller, over a period of ten days young artists

were invited to reflect on a wide variety of the topics and challenges facing creatives in the early stages of their career. Collaboration with the Art Mediation and Cultural Management study programme was an obvious choice, as its students include not only those who will later interpret the artworks in museums, but also future gallery owners and cultural managers. As a result, the experts were able to work with the artists not only to answer questions about the function and point of self-marketing, but also to consider ways to find and retain customers or gain access to galleries.

In the art academies, students initially tend to be shielded from the art market so as not to disrupt their artistic development. “And that is good and right,” says Römhild, “but when artists leave the academies with their qualification but don’t know how to frame a contract, then they face challenges.” Particularly when, in these times of self-marketing, galleries are not – or no longer – prepared to handle such things for artists. “Not everyone’s path leads via a gallery,” Römhild observes; in some cases, it may well also lead via social media channels.



PHOTO START ART WEEK

Jeff Koons creates highly financially successful art (left). Nadja Lana, who has been studying at the Düsseldorf Art Academy since 2016 and who painted the picture “Wahlverwandschaft” in 2021, is working toward that goal.



The power to create basic rights

Constitutional courts are changing

BY CAROLIN GRAPE

Constitutional courts ensure that the state does not violate basic human rights. A new trend has also become apparent in recent years: Around the world, when acting as the court of last resort, constitutional courts are – through their decisions and judgments – creating new basic rights or adding content to existing ones that cannot explicitly be found in constitutions.



PHOTO: PICTURE ALLIANCE/DPA - ULTIDECK

Dr iur. Jorge Luis León Vásquez is Professor of Public Law at the Pontificia Universidad Católica del Perú (Pontifical Catholic University of Peru) in Lima. Funded by the Alexander von Humboldt Foundation, the constitutional law expert from Latin America began a 16-month research project at the Chair of Public Law at Heinrich Heine University in May. Together with the holder of the Chair, Professor Dr Lothar Michael, he is working on a methodology for the creation of “new” basic rights by constitutional courts using his comparative analysis of the case

law of the German Federal Constitutional Court (BVerfG) and the constitutional courts in Latin America as a basis. The law professor is the first research fellow at the Faculty of Law.

Constitutional courts around the world are increasingly responding to changes in society and the rapid developments in IT. Examples of such responses from the Federal Constitutional Court include its decisions on the right to informal self-determination, the right to the guarantee of the confidentiality and integrity of information technology systems, the basic right to a subsistence minimum or the right to be forgotten. The starting point is the assumption that the Basic Law does not conclusively regulate the individual basic rights.

Comparative analysis is worthwhile

For León Vásquez, the phenomenon of the courts creating basic rights poses unanswered questions with regard to constitutional theory and doctrine: “Firstly, what type of power and function do the constitutional courts exercise when they create “new” basic rights? Do they have the power to change a constitution or to set standards? Secondly, what methodological approaches exist that the courts (should) adhere to in this creation process?” Finding answers to these questions is incredibly important, both for the theory and practice of basic law doctrine and for the legitimacy of constitutional court decisions.

It is precisely because rare exceptions and fundamental decisions are concerned that conducting a comparative analysis is worthwhile as it may uncover parallels and differences, and potentially even patterns. The planned research aims to combine comparative case law analyses with theoretical and methodological approaches. The goal: To propose a theoretical and methodological model for constitutional law.

Why is the HHU Faculty of Law particularly attractive for the Peruvian researcher? “I have been fascinated by how advanced German constitutional law doctrine and the case law of the Federal Constitutional Court are since my studies at the University of San Marcos in Lima,” explains Professor León Vásquez. “The legal and constitutional comparison with Germany is key because several new theories have been tested in both legal doctrine and case law about the type of power that a court like the Federal Constitutional Court is exercising in reality. Useful aspects will be singled out to enable the development of personal reflections and suggestions that



PHOTO WILFRIED MEYER

Constitutional law expert Professor Dr iur. Jorge Luis León Vásquez is the first Humboldt Research Fellow at the Faculty of Law and works at the Chair held by Professor Dr Lothar Michael.

are appropriate and applicable to the reality for constitutional courts in Latin America.” The research project being conducted by the Humboldt Research Fellow is thus an ideal fit with one of the focuses of the Chair of Public Law. The methods of constitutional change are also being examined here: “We are interested in the question of whether we can accept and justify the Federal Constitutional Court having the power to create basic rights,” says Professor Dr Lothar Michael. He continues: “The comparative Germany/Latin America perspective also enriches local research.” A classic win-win situation from which both sides benefit.

Humboldt Research Fellowships

With its Humboldt Research Fellowships for experienced researchers, the Alexander von Humboldt Foundation enables around 450 researchers with above-average qualifications from all fields and all countries to undertake research periods (lasting 6–18 months) in Germany every year. The Fellowship enables holders to realise a long-term research project within the framework of a working group they have selected themselves at a German university or research facility.

Professor Dr iur. Jorge Luis León Vásquez

(born in Huaraz/Peru in 1976) studied law and political science at the National University of San Marcos from 1998 to 2003. In 2005, he gained the professional title of lawyer with his dissertation on “The powers and boundaries of parliamentary inquiry commissions in Peruvian constitutional law.” From 2005 to 2017, León Vásquez was a research associate at the Peruvian constitutional court. After gaining his Master’s (in constitutional law) at the Pontifical Catholic University of Peru in Lima in 2006, he completed a doctorate between 2013 and 2016 at the University of Hamburg under the supervision of Professor Dr Markus Kotzur on the topic of “Constitutional jurisdiction, constitutional procedural law and pluralism. Simultaneously a contribution to Peter Häberle’s theory of constitutional jurisdiction as a function of society and constitutional procedural law as pluralism and participation law.” He wrote his doctoral thesis in German.

Since August 2017, León Vásquez has held a Professorship at the Faculty of Law of the Pontifical Catholic University of Peru, where he is also a member of the research group for constitutional law and basic rights. The expert on constitutional law advises state institutions in Peru including the Peruvian Congress, the parliament in Peru, or the Ministry of Justice and Human Rights.



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Putting people first

Health services researcher Andrea Icks focuses on what people want and need

BY VICTORIA MEINSCHÄFER

What information do people with chronic diseases such as metabolic or cardiovascular conditions need? What do they expect from health care models? How much time do they spend on “self-management” of their illness? Professor Dr Dr Andrea Icks (Institute for Health Services Research and Health Economics at the Centre for Health and Society) deals with precisely such questions.

Andrea Icks has conducted a wide range of studies, focusing in particular on people with diabetes and working closely with the German Diabetes Center (DDZ) in the process. The objective of person- or patient-centred health care is not only to consider the disease, but also to focus on people as a whole, with their questions and problems. And these differ considerably, for example with regard to the need for information: “Our studies reveal that people want to be informed about their disease in very different ways depending on their age, gender, educational background or state of illness,” says Andrea Icks. “Young, well-educated people may be more likely to want to know how they can integrate disease management into their everyday working life or whether they can cope with shift work. By contrast, older people for example may be more likely to ask themselves whether the expected side effects of therapies will even affect them at all.” Here, providing everyone with the same information is not helpful, but that is still all too often the case. “A lot of publications are written, but there is hardly any research on what people really want to know,” says Andrea Icks. And the better the health care providers know what their patients really want, the more

they can target the information they offer to them: “The studies show that people with diabetes are extremely interested in receiving information.”

Provide information in a needs-oriented way

What people who have diabetes want with regard to their treatment differs to the same degree: “Our studies involving patients with diabetes receiving specialist care have shown us that around three quarters wanted advice on lifestyle and medication from their general practitioner or diabetologist. Around a quarter of the patients wanted such information via apps or the Internet.”

Diabetes mellitus in particular, a “disease that accompanies people for a long time,” as Andrea Icks puts it, is very time-consuming for patients due to the self-management it requires. “This has rarely been studied to date,” says the health services researcher. And when the doctors treating them then tell them during consultations that it is important to exercise, monitor blood sugar and check their feet, then the time required for this should be ad-



PHOTO: MARIO DOBRA

The citizens' advisory board from the Institute for Health Services Research and Health Economics at the German Diabetes Center (from left): Evelyn Bruns, Professor Dr Andrea Icks, Lutz Denken, Christoph Rupprecht, Dr Hartmut Wecker, Nicola Irmer

“Our studies reveal that people want to be informed about their disease in very different ways depending on their age, gender, educational background or state of illness.”

Professor Dr Dr Andrea Icks – health services researcher

dressed. “According to our studies, people with diabetes spend an average of more than 2.5 hours per week on their diabetes self-management,” says Andrea Icks. “If you evaluate this time from a monetary perspective applying a net hourly wage rate, self-management results in costs which are higher than those for the medical treatment.” Professor Icks believes the health care system should focus on these issues.

In the sense of patient-centred health care, participatory research plays a key role – just like it does in Andrea Icks’ team. At the Institute for Health Services

Research and Health Economics at the DDZ, for example, which she also heads, a citizens’ advisory board is in place that assesses the Research Institute and advises it on its research questions and projects. Andrea Icks is enthusiastic about this perspective on scientific work: “The members of the advisory board play a pivotal role and contribute their own core competencies.

Involve co-researchers

The citizens’ advisory board offers key perspectives in the same way as the scientific advisory board.” Alongside the work on the advisory board, patients and citizens are also actively involved as co-researchers in the Institute’s research projects, for example in the evaluation of interviews on specific research topics. A current project funded by HHU focuses on aftercare for gestational diabetes. Here it is important to the researchers to involve as many different people as possible as co-researchers so their various experiences and skills can enhance the research. To achieve this diversity, the co-researchers should be men and women, come from different age brackets and professional groups, and people with a migration background should be represented, too. In this way, the researchers can find out what everyday questions can arise. “And they help us answer the question of how we can communicate with society in the best possible way.” The exchange of different perspectives can be a learning process for everyone involved.

CONTACT

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What information do people with diabetes want?

According to a recent study, 38 per cent of all respondents are particularly interested in long-term complications, 35 per cent would like to know more about treatment and therapy. 33 per cent would like to be better informed about the causes of diabetes. Information on daily life with diabetes is of interest to 28 per cent of the respondents. Andrea Icks is particularly excited about the interest in research: around a quarter of those surveyed would like to be informed about current diabetes research.

More information

- www.uniklinik-duesseldorf.de/patienten-besucher/klinikeninstitutezentren/institut-fuer-versorgungsforschung-und-gesundheitsoekonomie
- www.buergerschaffenwissen.de/projekt/nachsorge-schwangerschaftsdiabetes-was-ist-wichtig



Haus der Universität

The *Haus der Universität* is a place of dialogue and exchange between science and society – in the heart of Düsseldorf. After extensive renovations, the van Meeteren Foundation kindly allowed Heinrich Heine University to use the building at Schadowplatz 14 as an event centre and, since 2013, as a venue for scientific conferences and for presenting university research and

teaching as well as academic culture. The *Haus der Universität* takes on a central function for Heinrich Heine University at the interface between science and public. It is part of a higher-level university strategy, the *Bürgeruniversität*, which actively furthers the exchange between the city of Düsseldorf, its citizens as well as society as a whole.

Further information, programme, bookings:
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