

MAGAZINE

of Heinrich Heine University Düsseldorf

**No simple
answers.**
100 years Joseph Beuys

PROJECT METHODCOV
Joined Covid-19
research

FORENSIC LINGUISTICS
Culprits revealed
through language

ECONOMIST RANKING
DICE experts
highly influential

hhu.



Düsseldorf's Faculty of Medicine contributes to several NUM Covid-19 projects.

PHOTO: MARCEL KUSCH

03 EDITORIAL

Faculties

FACULTY OF ARTS AND HUMANITIES

04 "Then I stormed out of the house and then jumped on my bike."

FACULTY OF BUSINESS

ADMINISTRATION AND ECONOMICS

08 DICE economists are influential

MEDICAL FACULTY

09 Covid-19 research: Pulling together

FACULTY OF MATHEMATICS AND

NATURAL SCIENCES

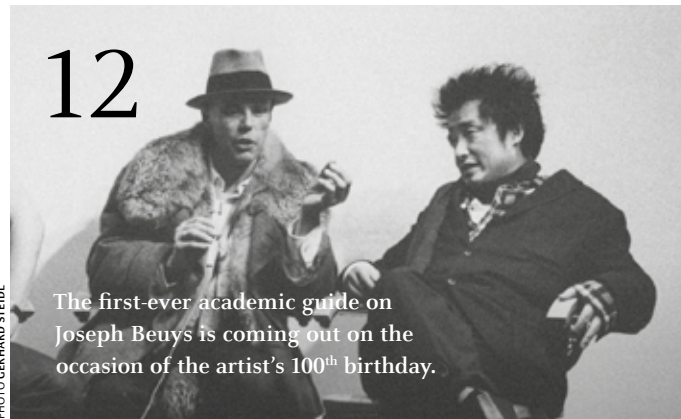
20 Optimised organisms for a sustainable economy

FACULTY OF LAW

26 German naming laws: thank goodness no one knows

Title

12 **No simple answers**
100 years Joseph Beuys



The first-ever academic guide on Joseph Beuys is coming out on the occasion of the artist's 100th birthday.

PHOTO: GERHARD STEIDL

Legal notice

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Editorial



Dear reader,

In 2021, Joseph Beuys would have celebrated his 100th birthday. The life of this exceptional artist is closely linked to Düsseldorf – not least because of the time he spent at the local arts academy, the Kunstakademie Düsseldorf. We are very fortunate that HHU's Department of Art History is instrumental in shaping the Beuys anniversary year.

Of course, we would love to know what Beuys would have made of the Covid-19 crisis and its repercussions, how he would have reflected the pandemic in his works of art and his actions. Social issues always played a key role in his life and his oeuvre. Beuys was a legendary early advocate of environmental issues and sustainability. Art, society and science were, and continue to be, tightly interwoven where these topics are concerned.

The Covid-19 crisis, too, connects these three fields and changes them in parallel. The pandemic seems to be a catalyst in the scientific field by strengthening the network of scientists in Europe and around the world. Like never before in history, research results are now being shared and exchanged on a global scale. This becomes apparent in the article about the medical Covid-19 research carried out at HHU, which you can read more about in this issue.

Of course, the coronavirus crisis has strongly affected HHU and yet: research continues in many areas, it must continue. The world does not stop turning and a wide array of exciting and relevant questions are waiting to be answered.

In doing so, science is at its best striving for knowledge and truth. In this context, I would like to recommend the article on forensic linguistics, a linguistic field that analyses speech to tell the difference between truth and lies. All other articles also testify to the depth and breadth of the research conducted at HHU. Get a picture of the whole story in this issue and stay safe.

Best regards,

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

“ **then** I **stormed**
out **OF** *the* **HOUSE**
AND **then** **jumped**
on **MY** **bike** .”

Prof Dr Dieter Stein and Dr Martina Nicklaus conduct research in the field of forensic linguistics

BY VICTORIA MEINSCHÄFER

“He’s lying – you can tell right away!” Really? How? Something that is often already difficult to judge in everyday life becomes all the more so in a court of law. When analysis of language use is to be employed to differentiate between truth and lies, then forensic linguists must be called in.



his specialist field in which language and the law converge has been the focus of interest for Prof Dr Dieter Stein and Dr Martina Nicklaus for many years now. Stein, a scholar of Linguistics and English linguistics, founded the International Law and Language Association (ILLA) in 2006 together with Prof Dr Alexander Lorz from the Faculty of Law (currently the Hessian Minister of Education and Religious Affairs) and Frances Olsen from the Faculty of Law at the University of California in Los Angeles (UCLA) with the support of local law firms and Heinrich Heine University Düsseldorf. An interest in the analysis of linguistic features to differentiate between truth and lies in court

Language in the legal system

cases led Nicklaus, a scholar of the Romance Linguistics, to forensic linguistics. Indeed, language and the law have more to do with each other than is perhaps apparent at first glance. “Law is made up of language,” says Stein. “It exists through language and all legal principles are formulated in language.” Forensic linguistics is part of legal linguistics, which deals with all aspects of language in the domain of law: “Whenever language is analysed to solve a crime, then this is forensic linguistics,” explains Nicklaus. While the analysis begins with the question of the lexicon used, it goes far beyond this. Someone from the older generation usually has a lexicon that is different from their grandchildren, of course. But this rarely plays a role in court proceedings. “The focus is on words – everyone can see them. But what is far more interesting is the syntax,” remarks Nicklaus. “Because speakers don’t think about that.” One example that is now available to the general public comes from the first criminal case that helped to establish forensic linguistics as a discipline.

Known as the ‘Evans Statements’, it mainly focuses on syntactic features. These could be used to show that the convicted man could not have written the decisive confession. The variation between “Then he came” and “He then came” was of particular interests for linguists, for example. This formed part of a larger complex of frequently occurring syntactic features whose statistical totality ultimately produced a clear picture. The trial, which was instrumental in the abolition of capital punishment in the United Kingdom, began with a classic miscarriage of justice: the defendant was executed. Following a forensic analysis of the language, the sentence was repealed – albeit too late for the executed person.

Lexicon and syntax

Comparable cases brought to the public eye in which a forensic analysis of the language played a key role include the case of the “Unabomber” in the USA and, more recently, the abduction of Markus Würth in Germany.

Neither the lexicon nor the syntax can be determined externally, independently of the speaker; all analyses can only ever refer to the language that a person normally uses. To detect possible lies or attempts at deception, the ‘baseline’ (i.e. the speaker’s normal language usage) is first determined as a reference. “Today, these analyses are mostly performed by psychologists,” explains Nicklaus. “The person is first asked to report on an event that really happened in the past.” Based on this ‘baseline’ established through spontaneous storytelling, the individual style is determined and all further statements then compared with this. One problem that all analysts face is gaining access to court records. This is often difficult – and at times impossible. The analysts need the consent of all involved parties to be able to analyse data, and obtaining this consent is in reality virtually impossible. Furthermore, contrary to popular belief, court proceedings are not transcribed and no entirely reliable records

“The focus is on words – everyone can see them. But what is far more interesting is the syntax because speakers don’t think about that.”

— Dr Martina Nicklaus
Romance scholar

exist of the majority of trials after they end. So mostly only the judges’ assessments and discussion transcripts are available to the experts. “In cases involving abuse, psychologists are always also called in to clarify the extent to which the victim’s statements are based on actual experiences,” says Nicklaus.

Lies are often revealed through language

While psychologists can usually draw on their professional experience to judge the veracity of statements fairly well, forensic linguists afford a sophisticated set of tools to help them detect lies. A number of linguistic clues can expose liars: “This includes the considerably more precise use of verbs of motion, for instance,” says Nicklaus. People generally tend to use the verbs “walk” or “run” to describe actions; in contrast, liars often employ very precise verbs of motion in such descriptions, like “storm out” or “rush past”. Another clue are a certain type of spontaneous corrections where the speaker corrects themselves while speaking. This is usually an indication that the truth is being told: “If a story is made up, then such spontaneous corrections do not occur,” notes Stein.

He also points out the increased use of particles in lies. “To give an example from German, take the sentence ‘Dann bin ich halt zum Bahnhof gegangen und da habe ich halt einen Fahrschein gekauft.’ This translates literally as ‘So then I went to the station and I bought a ticket there.’ The particle ‘halt’ used in the German sentence can be interpreted in certain forensically relevant narrative situations to mean that the speaker does not want their statement to be questioned. ‘Don’t ask any more questions, leave it at that!’ is the message they seek to convey.” Stein explains and adds: “In such situations, sentences with a stereotypical structure and scant individualisation are usually also conspicuous. Actions are repeatedly linked together using ‘and then ... and then ... and then’. The very specific ‘baseline’ and reference values related to the very distinct text type for this sort of situation are always decisive to the ‘diagnostic’ interpretation – this

cannot be emphasised enough. Hence the German particle ‘halt’ and the English adverb ‘then’ cannot always be interpreted in this way, for example, but only in this very specific, forensically relevant language usage situation, in relation to the ‘baseline’ – as a pre-existing ‘norm value’. It is here that mistakes were often made in earlier investigations where there was less of an awareness of the methodology and more amateur linguistic knowledge.”

Instrumental in the abolishment of capital punishment

Nicklaus and Stein would like to see the further professionalisation and advancement of forensic linguistics in the German legal system in the future. Similar to how a specialist department has already been established within the Federal Criminal Police Office (Bundeskriminalamt, BKA). ILLA moreover strives to establish, certify and standardise training in this field in which many overlaps exist between language and the law. Training and practice should be oriented to international standards,

which require extensive academic (linguistic) training in addition to further requirements for legal practice. It is also important to develop larger quantities of corpora for machine recognition of linguistic usage patterns and types in order to be able to establish ‘baselines’ using artificial intelligence. Stein and Nicklaus both agree: “For Heinrich Heine University Düsseldorf, this application of linguistic knowledge to a specific societal domain, namely that of the law, represents an important aspect of knowledge transfer to society. Its further development within the university is an important desideratum.”

Using language to determine the perpetrator

In the summer semester 2020, Prof Dr Dieter Stein and Dr Martina Nicklaus jointly organised a lecture series at University House entitled ‘An der Sprache den Täter erkennen’ [‘Recognising the Perpetrator through Language’]. The many overlaps between language and the law were discussed during the lectures (delivered to a reduced audience due to the coronavirus pandemic). Most of the lectures will be included in the publication ‘Language as Evidence. The Linguist as Expert Witness’ due to be published by Palgrave Macmillan in 2021.

**“If a story is made up,
then spontaneous
corrections do not occur.”**

— Prof Dr Dieter Stein
English scholar

F.A.Z. 2020 economist rankings

DICE economists
are influential

For many economists, generating economically and politically relevant research results is all in a day's work. But do their insights reach politicians and the public? Which economists have the most influence in the media, the research community and the political realm?

The newspaper F.A.Z. (Frankfurter Allgemeine Zeitung) has conducted its Economist Rankings since 2013 to gauge the impact that economists working in Germany, Switzerland and Austria have among their peers, in politics and in the media, increasingly factoring in their presence on social media as well. The Rankings are published annually, usually in September.

In the latest rankings published 24 September, Jens Südekum and Justus Haucap of the Düsseldorf Institute for Competitive Economics (DICE) were named as being among the most influential economic advisers working today. The rankings showed some surprising changes, reflecting among other factors how the pandemic has shaken things up.

meets with a high level of interest. In a Sunday paper interview with the Frankfurter Allgemeine last year Südekum noted how formerly only the 'Sages of the Economy' on the German Council of Economic Experts were ever asked to air their views, whereas now "social media have made it possible for other individuals to gain prominence through sound analysis." Professor Südekum is frequently contacted by the media and cited in economic publications.

DICE Director Justus Haucap now ranks 21st overall, who is a prominent political opinion maker, especially in the view of the government ministry staff and members of parliament surveyed. Professor Haucap moved down four places in the rankings in this year of pandemic, possibly reflecting how the tide has turned against advocates of free markets as governments now struggle to contain the economic impact of the corona crisis and stabilise the economy. Experts in competition economics have been similarly affected across the board in the rankings.

The concept behind the F.A.Z. Economist Rankings is to gauge the recognition of economists' work among their peers, in government and among the public via the media. To earn a spot in the rankings an economist must be a leader in the field who influences his/her peers, is heard in the media, is esteemed as a policy adviser ... and generates interest on Twitter, as the social network most prominent for economic debate. Citations in research, in the media and by politicians are weighted equally as factors in gauging influence.

The F.A.Z. designed its rankings in partnership with media intelligence provider Unicepta, economic policy think tank Econwatch, the Leibniz Information Centre for Economics (ZBW), scientific publisher Elsevier and the DICE. C. G.

Prominent in both media
and government

Jens Südekum advanced the most in the nationwide rankings for Germany, who is Professor of International Economics at DICE and member of the Scientific Advisory Board of the Federal Ministry for Economic Affairs and Energy. After ranking 16th last year he has risen to a top spot at number five, now being seen as the most influential economist in the state of North Rhine-Westphalia, much sought-after as an economic policy adviser in the COVID era. Politicians and members of government ministries surveyed named macroeconomist Südekum as a highly influential adviser with strong views who is readily available for comment.

In substantial part this reputation was earned through activity on Twitter, where his commentary



Prof Dr Justus Haucap (top) and Prof Dr Jens Südekum are among the most influential economists in German-speaking Europe.



Pulling together

The new national academic network
for research into Covid-19

BY SUSANNE DOPHEIDE

Ever since the pandemic began, researchers all over the world have been busy gathering theoretical and clinical insights into the novel coronavirus, its associated disease, Covid-19, and best practices for managing the pandemic. Funding programmes and research projects have sprung up globally.

We are currently witnessing an ongoing process of scientific discovery in real time. Our initial, somewhat naïve hope that immunisation and treatment options would soon put an end to the pandemic has made way for a more realistic assessment of the situation. Medical research has faced a steep learning curve in its quest to help humanity through the SARS-CoV-2 pandemic. Even vaccinations are now within tangible reach, but the novel coronavirus remains a serious challenge for our society. The new national academic network for research into Covid-19 (Nationales Forschungsnetzwerk der Universitätsmedizin zu Covid-19, NUM), which spans all university medical departments across Germany, is funded by the Federal Government and coordinated by Charité Berlin in support of the research process. Heinrich Heine University Düsseldorf and the University Hospital of Düsseldorf actively contribute to ten of its projects.

150 million Euros for coronavirus research

The Federal Ministry of Education and Research has allocated €150 million in funding to the NUM, an unprecedented and coordinated research initiative consisting of 13 collaborative projects. Each project aims to produce useful scientific data, establish networks in the various specialist disciplines, examine care structures, and ensure that research results can be applied effectively to practical patient care. It also takes the social aspects of the pandemic into account.

NUM projects with involvement of the University Hospital of Düsseldorf

AKTIN EZV

The accident and emergency register is being modified and expanded to support research into the pandemic. It improves emergency healthcare research by revealing structures and processes across hospitals in a standardised format.

B-Fast

'Surveillance' covers monitoring, analysis, interpretation and reporting of health-related data. The B-Fast project team is developing a testing platform for relevant strategies.

CEO-sys

Spearheaded by Cochrane Germany, the CEO-sys project team is developing a national evidence network for Covid-19. It aims to provide a basis for individual treatment decisions and institutional and public care strategies.

COVIM

COVIM is a collaboration of multiple university hospitals. The project aims to establish a pool of immunological data gathered from population-based studies and examinations of people who have recovered from Covid-19 in order to develop new insights into immunity against SARS-CoV-2.



Professor Heyo Kroemer and Professor Christian Drosten of Charité Berlin are the initiators of the national network, which efficiently pools the resources of all university medical departments in order to counteract the major challenge and threat that Covid-19 poses to our society. The Federal Ministry of Education and Research hopes that the network and its insights will be able to provide a blueprint for potential future pandemics, too.

For the first time in history, all university medical departments across Germany have joined forces. Federal Research Minister Anja Karliczek and Professor Heyo Kroemer presented the 13 funded collaborative projects in Berlin in early October.

Harnessing the expertise of German university hospitals and medical departments

The University Hospital of Düsseldorf coordinates the MethodCOV project, in which 37 research institutes from 24 university hospitals work together and support studies into Covid-19 by contributing insights into its social, cultural and environmental factors. The aim of the project is to establish a pool of expertise in pandemic research from the university hospitals and medical faculties.

Expectations in scientists and researchers are higher than ever as the public looks to them for protection and treatment. The new research network harnesses its combined research and healthcare competences in an effort to make a significant contribution to the ongoing struggle against the pandemic.

→ **More information about the research network:**
www.netzwerk-universitaetsmedizin.de



DEFEAT PANDEMICS

Connecting the majority of Germany's university and non-university pathological, neuropathological and forensic-medicine institutes, this network project aims to establish an in-depth understanding of the disease and contribute to the development of more effective treatment methods.

EVIPAN Unimed

A national pandemic management approach is required to identify and treat Covid-19 patients faster and more effectively in future.

FoDaPI

This project aims to create a uniform, national infrastructure to store Covid-19 research data sets as a central source of information in full compliance with privacy laws.

PallPan

The PallPan project harnesses solid scientific data to develop guidelines on providing care to seriously ill patients and patients approaching the end of their life during pandemics, taking into account their needs as well as those of their families.

MethodCOV


The project aims to establish a network of experts to analyse the impact of social factors, such as a person's occupation or social environment.

RACoon

The project examines radiographs of patients with suspected Covid-19 in order to determine patterns of the disease. The results are analysed by an artificial intelligence and used to inform epidemiological studies, assessments and early-warning systems.



Research into the Sars-CoV-2-Virus at the Institute of Virology




JOSEPH BEUYS

Joseph Beuys at a panel discussion with
Douglas Davis at the Ronald Feldman Gallery,
New York, 1974

No simple answers.

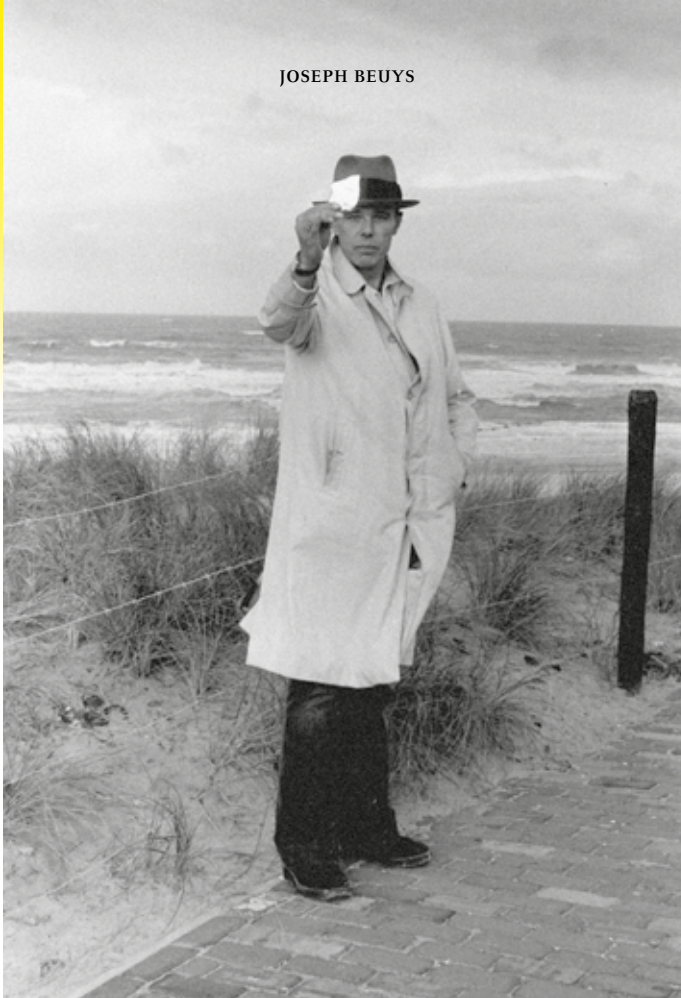
The first-ever academic guide on
Joseph Beuys is coming out on the occasion
of the artist's 100th birthday.

A black and white photograph of Joseph Beuys. He is wearing a dark hat and a heavy, textured fur coat. He is holding a pipe in his right hand. The background is a plain, light-colored wall. The lighting is dramatic, with strong shadows.

BY VICTORIA MEINSCHÄFER

Fat and felt, honey pump, fishing vest... these things and more will be recalled in a host of exhibitions and major projects in celebration of the centenary birthday of Joseph Beuys – an artist who remains fairly well-known. But with everybody talking about the man in the hat and his art, we will still need a comprehensive reference work that documents the status quo of Beuys research while inspiring new research projects. That's why in the spring of 2021 publisher J.B. Metzler Verlag will be bringing out the first-ever guide encompassing Beuys' life, work and legacy.

JOSEPH BEUYS



PHOTOS CAROLINE TISDALL

Joseph Beuys, Scheveningen, 1976

The reference work is co-edited by Dr Timo Skrandies, Professor at the HHU Department of Art History, and Dr Bettina Paust, former Artistic Director of Museum Schloss Moyland, home to the Joseph Beuys Archive. “The book is an academic guide accompanying the wide-ranging exhibitions and art projects that will be taking place in

North Rhine-Westphalia as part of the upcoming Beuys Year celebrations,” explains Skrandies. “The time is right for a systematic treatment of Beuys from the research standpoint of the 21st century.”

For until now, Beuys research has been lacking a standard reference work that catalogues the artist’s complex oeuvre, traces the changes in how research has approached his work and outlines research desiderata for further study. Of particular interest is the recent paradigm shift in Beuys research, as Skrandies points out: “During his lifetime and for years thereafter, Beuys research utilised a vocabulary that was principally based on Beuys’ own concepts and today often sounds like a kind of cant.” A younger generation of academics has now taken a more critical and nuanced approach to his work.

Critical analysis

Both Paust and Skrandies view Beuys as a thoroughly contemporary artist yet today. “The issues Beuys focused on – like sustainability and environmental degradation – are as relevant as ever,” Paust finds. And in expanding public consciousness regarding what is art, the artist



PHOTO FLORIAN KAISER-WINTER

Prof Dr Timo Skrandies

HHU Department of Art History, editor of
the Joseph Beuys Academic Guide

called attention to key social issues, says Skrandies: “Beuys was always concerned with possibilities for broadening the mind, underscoring consistently in his works how there are no simple answers.” Beuys’ artworks inquire into how people interact with each other and with the environment, calling society and its seeming exigencies into question.

All questions allowed

Skrandies sees many Beuys installations as exploring a dichotomy of rigid versus openly flexible thinking, such as “Honey Pump at the Workplace”, which was set up in the Fridericianum museum for the documenta 6 exhibition in Kassel in 1977. This involved 150 kilos of honey and 100 kilos of margarine being continuously pumped from a “machine room” in the basement of the Fridericianum up into the building’s dome. In an adjacent room constituting part of the art installation, blackboards with chalk and chairs were set up to encourage dialogue.

Beuys held discussions with visitors in this room for 100 days as part of what he called a “Free International University”, as Skrandies elaborates: “Fat and honey are amorphous and can flow, but they solidify when cold.



PHOTO FLORIAN KAISER-WINTER

Dr Bettina Paust

Former Artistic Director of Museum
Schloss Moyland, housing the Joseph Beuys
Archive, Editor of the Academic Guide

Beuys drew anthropological parallels to the properties of these materials, seeing for example flow as emblematic of dynamic, flexible thinking, which can calcify into an inflexible rationality exemplified by his Fettecke (‘fat corner’).” The authors insist, as art historians, that the “honey pump” must be viewed in connection from the discussion room, as they form an inseparable whole. “This concept of an alternative academy open to everyone



The discussion room was a key element of the installation “Honey Pump at the Workplace”, Joseph Beuys, documenta 6, Kassel, 1977

is a key element," Paust observes, "as a place where any kind of question may be asked about the make-up and functioning of society."

Shaping society

Such openness toward anyone inclined to pursue the questions his works pose is characteristic of Beuys. This is how a scandal erupted, for example, in 1972 when he allowed all student applicants to at Düsseldorf Art Academy who had been rejected to attend his class anyway,

leading to his expulsion. The episode is illustrative of Beuys' conviction that everyone has the right to engage with art. As Skrandies notes, "That is what he was talking about when he said, 'everyone is an artist'. In Beuys' broadly expanded understanding, any act that shapes society represents a formative process akin to the plastic arts." If, then, all members of society are equals, an institution like the Art Academy cannot simply turn away interested members of the public. "It was of course perfectly OK for Beuys that many who came to him did not end up working as an artist. If they were to discover, in studying art, that they actually preferred to go study physics instead, that was fine."



© JOSEPH BEUYS/VC BILDKUNST, BONN, 2020; PHOTO CAROLINE TISDALL

Joseph Beuys, Galerie Durand-Dessert, Paris 1982

Prof Dr Timo Skrandies and Dr Bettina Paust believe that Beuys is as relevant today as ever before.

PHOTO FLORIAN KAISER-WINTER



“In his works and performances Beuys wanted to demonstrate how broadly our thinking can be expanded, pointing out consistently that there are no simple answers.”

— Prof Dr Timo Skrandies
HHU Department of Art History

Who determines what people get to study? The question is not an unfamiliar one to Skrandies, as current Vice Dean of the School of Liberal Arts. “Of course practically, some things are just not doable. Sure, there are constraints and parameters, but Beuys allows us to look again and question certain things.” For example, the concept of the museum as a place for viewing art is called into question. “For Beuys, art is always an invitation to dialogue, thus museums should, in his view, much more aggressively position themselves as a place for societal discourse. Interestingly, this now quite contemporary view of the role of museums was asserted as an objective by Beuys 50 years ago,” observes co-author Paust.

Beuys was famous and had a major impact in his day, but his continuing influence on artists today is debatable. “Beuys’ broad definition of art has never at any point had any traction in the art market,” Paust continues. Yet many artists are concerned with Beuys, including Elaine Sturtevant, Christoph Schlingensiefel and Matthew Barney. Beuys has had the most impact on performative art as exemplified by such artist collectives as Jackson Pollock Bar, Showcase Beat Le Mot and Bruce High Quality Foundation as well as the duo Deufert & Plischke.

Contemporary Beuys reception

Authors Skrandies and Paust have no objections regarding the popularisation of Beuys, whose his “fat and felt” is now widely known. “His work gets a simplistic treatment,” Skrandies finds, “but that’s only a problem when people start thinking that’s all there was to it,” says Paust, noting how popularisation is in part driven by merchandising, which has opened up a pathway to dis-

covery: “Merchandise can provide an access point through which some will start engaging with Beuys.” Beuys would scarcely have minded his work being popularised, she believes, citing the fact that “he did after all appear in ads, and then used the money to fund the project “7,000 Oaks: City Forestation Instead Of City Administration”. Beuys saw advertising as relevant to his critique of consumerism – and Skrandies has no qualms about the Playmobil version of the artist that has been seen, with little plastic fat corner and felt cloth): “If we’re talking about that, that’s about commerce, not art.”

Advertising and consumer critique

Indeed, consumerism and commerce in American society were thematised in Beuys’ 1974 conceptual art performance “I Like America and America Likes Me”, which commenced upon his arrival at the airport with Beuys being wrapped in felt from head to toe and driven to the René Block Gallery in an ambulance. The artist then spent the next three days in a room with a wild

The Guide

Joseph Beuys. *Leben – Werk – Wirkung*, Timo Skrandies and Bettina Paust eds., in collaboration with Jasmina Nöllen, Alina Samsonija and Zsuzsanna Aszodi. Heidelberg, Metzler Verlag 2021

“Use your mind or get out!”

— Joseph Beuys

coyote, performing stunts like piling up stacks of the daily Wall Street Journal, which the animal then urinated on, marking its territory. Skrandies: “The performance was, among other things, a commentary on the capitalistic structuring of society in the United States – a country whose origins go back to indigenous peoples.

This perspectival shift typical of Beuys’ work is now taught and explored in transcultural studies and other degree programmes,” Skrandies explains, pointing out the broader notion again evident here of what art is. “Abandoning dichotomy, linearity and ideas of purity, this cultural studies approach proceeds from an understanding of knowledge as situated within complex material and hybrid relations.”

Just as a culture is never a finished, discretely existing entity, Beuys’ “anti-art” was not about abandoning art but rather about recognising and exploring the creative moment within everyday processes, leading to an under-

standing of all action as art. “Joseph Beuys was against rigid, schematic thinking, rejecting the dualism of East versus West, for example,” says Paust. “For Beuys, culture was always a space of transitional flux!”

Event series

100 Years of Joseph Beuys

What is the role of our thinking, feeling or yearning in the plastic arts? Is art the only revolutionary force? Is future a category of art? Are these even the right questions?

One hundred years after the artist’s birth, the state of North Rhine-Westphalia is reviving the questions underlying his art and thought in the programme of events slated for the Beuys 2021 anniversary year. 100 Years of Joseph Beuys will be marked by a host of exhibitions, happenings, theatre and musical performances and courses for learning about the fascinating and controversial ideas of one of the most internationally influential visual artists of the 20th century. Some 20 organisations and institutions in different twelve cities have events planned, inviting you to explore the international importance of Beuys for both art and society. The larger aim is to stimulate thought – whether aligned with, parallel to or counter to the ideas of the legendary man in the hat – about our ideas of democracy and freedom, about art and politics and about what needs doing right now.

For information on all programme events visit www.beuys2021.de



Joseph Beuys, I Like America and America Likes Me, Galerie René Block, New York, 21-25 May 1974

© JOSEPH BEUYS / VG BILD-KUNST, BONN 2020; PHOTOS CAROLINE TISDALL



Bioeconomics

Optimised organisms for a sustainable economy

BY ARNE CLAUSSEN

Bioeconomics is the focus of the 2020/21 academic year, and it is a hot topic for many other reasons, too. Thanks to its Bioeconomy Science Center, North-Rhine Westphalia is an important hub for the discipline. Heinrich Heine University Düsseldorf is an active contributor in several relevant key research areas.



PHOTO CHRISTOPH KAWAN

Professor Markus Pauly, Director of the Institute of Plant Cell Biology and Biotechnology, examines a young maize plant.

“If we want sustainability, the plants used in bioeconomics need to grow where they do not displace food or feed related plants or ecosystems.”

— Professor Markus Pauly
Biologist

Professor Markus Pauly, Director of the Institute of Plant Cell Biology and Biotechnology, has this to say on the concept of bioeconomics: “This is not a new field, neither on a theoretical nor practical level. Just think of the biological resources that we have already utilized for food, construction and raw materials for centuries. But there is more to the discipline these days: plant and animal resources are used in many other branches of science; in addition to providing food and feed they can replace fossil fuels and raw materials for commodity chemicals.”

Besides their role as combustibles and fuels, crude oil, natural gas and coal continue to be the basic materials for the chemical and pharmaceutical industries. But plants can provide many of the substances required: hydrocarbons, sugar molecules, and protein molecules, for instance. Today, we are able to breed or biotechnologically alter plants so

that they produce desirable raw materials sustainably and in larger quantities, even in modified variations. Apart from plants, deliberately modified bacterial strains and fungi, such as yeasts, play an important role in the transformation of vegetative biomass into industrial basic chemicals and/or fuels.

Raw materials from biological sources are sustainable and carbon-neutral. Professor Pauly explains: “Plant biomass burnt to generate heat does emit CO₂ into the atmosphere. But it only emits as much as it initially absorbed from the atmosphere during its growth phase, when it performs photosynthesis to convert CO₂ and water into sugar molecules for its own structural development.”

Finding suitable replacements for fossil fuels

This allows us to replace some fossil fuels: instead of crude oil, we can use biofuels made from rapeseed oil; instead of coal, wood from fast-growing trees; instead of natural gas, biogas produced during the fermentation of sugars present in vegetable biomass. Plants are promising construction materials, too. Thinking beyond traditional building timber, we can fortify concrete with plant fibres, for example.

Several negative aspects of the use of plant-based substitutes become frequently apparent. In Southeast Asia, vast swathes of rainforest are being destroyed to make way for oil palm plantations, which provide raw materials for

the production of biodiesel. Professor Pauly: “Of course, this is not the way to go. If we want sustainability, the plants used in bioeconomics need to grow where they do not displace other food or feed related plants or ecosystems. They need to grow where not much else grows.” Silphia grown in open-cast quarries, for example, or agaves in deserts.

To achieve this, the plants are bred to be more resilient to heat, aridity or other environmental factors they might encounter in their harsh localities. “We need to harness the genetic biodiversity of nature”, Pauly comments. Many natural organisms have already found ways to withstand adverse conditions, so breeders use their tools and methods to equip plants with the properties of other plants.

Specific breeding goals require careful consideration: modern wheat, for example, has been optimised to produce short stalks and lots of seeds containing starch for food consumption. That makes it a poor source of biomass for the bioeconomy, however – for that purpose, longer stalks are better. Professor Pauly points out his own research project, CORNWALL, funded by the Federal Ministry of Education and Research within the scope of its programme for plant-breeding research for the bioeconomy. “A few

years ago, we developed a maize variety called ‘Candy-leaf 1’. It produces the same amount of kernels as regular maize but more glucan-chains in the stem and leaves.” The researchers achieved this through a process of conventional mutagenesis. Using chemicals, they randomly modified the genome of the plant to produce ten thousand mutated maize plants. They then identified multiple plants with the required properties in a mass screening process using a special robot present at the Heinrich Heine University.

Genome analysis

A genetic analysis of the new plants revealed the effects of the mutagenesis. In ‘Candy-leaf 1’, a digestive enzyme was deactivated, increasing the number of glucan polymers in this maize variety. “The Candy-leaf variety, which we have patented, can be grown for forage; the biomass is used as silage. We have also patented the underlying genetic mechanism”, Professor Pauly explains. The gene governing the relevant digestive enzyme is not unique to maize; it exists in many other crops, where it can be deactivated.

Reflectance measurements in the field: determining the yield and function of rapeseed plants.



PHOTO: FZJ

A drone above the field: in the rings of the BreedFACE system, future CO₂ concentrations are simulated in the open air to measure the reaction of plants to future environmental conditions.



PHOTO: FZJ/ RALF-JUWE LIMBACH

Hence, other grains, such as millet or wheat, will also produce more glucan polymers in their stems. Professor Pauly represents Heinrich Heine University Düsseldorf on the executive board of the Bioeconomy Science Center (BioSC). The University's Professor Ulrich Schurr is the managing director of the research and transfer association, which receives funding from the state government of North-Rhine Westphalia.

He also manages IBC 2: Plant Sciences at Forschungszentrum Jülich. He comments: "North-Rhine Westphalia is in an excellent position for bioeconomics. We have the densest research environment in all of Europe and outstanding economic strength in the agricultural, food, paper, chemical and pharmaceutical industries." It is crucial to interconnect these strengths and put research insights into practice. "Bioeconomics can be an important tool for structural change in the Ruhr area as it transforms from an

BioSC

The association of universities in Aachen, Bonn and Düsseldorf plus Forschungszentrum Jülich was established ten years ago. It unites 67 institutes and professorships with three Excellence Clusters from North-Rhine Westphalia. CEPLAS at Heinrich Heine University Düsseldorf is one of them. The association has four main areas of research: **plant production, utilisation/biorefinery, biotechnology and socioeconomics**. Rather than focusing on a single topic, BioSC projects are designed to cover multiple.

The state government of North-Rhine Westphalia funds the BioSC project to the tune of €5.8 million per year over a period of ten years. The funds are available for small, short-term endeavours as well as long-term projects. Six 'FocusLabs' form the heart of the project: they are cross-institutional work groups on specific topics, each led by an early-career researcher. Dr Anita Loeschcke of the HHU Chair of Molecular Enzyme Technology at Forschungszentrum Jülich leads the work group CombiCom, which aims to facilitate the sustainable production of new, valuable natural materials through synthetic biology.

Achieving structural change with bioeconomics

economy reliant on fossil fuels to one based on renewable raw materials." To further this cause, Professor Schurr has co-founded the project Bioökonomie Revier. "We want to approach scientific topics from the perspective of our own region and use them to achieve structural change in the Rheinisches Revier [a mining district in the Cologne Lowland]."

The chemical industry is an important sector that requires large quantities of carbon, most of which it derives from fossil resources. Switching to biological materials is

certainly a possibility from a technical point of view, but the decision ultimately comes down to economic aspects. Schurr: “Sustainability is not a particularly important consideration for the mass market yet. Price matters. At the moment, fossil resources are extremely cheap. But CO₂ certificates could be a game changer.” And several major corporations have, indeed, signalled a paradigm shift. Most recently, a British energy giant has declared peak oil: the point at which oil production tops out, not least due to the finite nature of its resources. At that point, other sources of energy will move in to replace it.

Enhancing positive properties

Professor Schurr’s working group at Forschungszentrum Jülich researches various plant systems and ways of utilising them. The first step is to improve plants by enhancing their positive features: they can be made to yield a greater harvest while using the same amount of nutrients, for example, or become more resistant to arid conditions in order to withstand climate change better. “We are particularly interested in perennials. They are much more efficient because they do not have to regrow their roots every year.” They also have a more intricate, deeper root system allowing them to draw water from deeper strata.

The researchers at Jülich also work with algae, which they grow in large tubes to produce biomass and use their

“Bioeconomics can be an important tool for structural change in the Ruhr area.”

— Professor Ulrich Schurr
Biologist

carbon for energy. But there is even greater value to be derived from algae: they are rich in omega-3 fatty acids and an interesting source of dyes. “We are all about closing cycles”, Schurr emphasises. “We want to recover the nutrients we use to produce algae in addition to the ‘higher’ substances they generate.”

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PHOTO: FZJ / WILHELM PETER SCHNEIDER

Professor Ulrich Schurr of the Institute of Bio- and Geosciences – IBG-2: Plant Sciences at Forschungszentrum Jülich

German naming laws: thank goodness no one knows...

Fundamental reform of the German naming laws recommended

BY VICTORIA MEINSCHÄFER

Do you like your name? Or would you rather be called something else? Planning to marry soon and want to take a double family name?



The naming laws affect everyone. “It’s one of those wonderful topics that affects everyone directly and everyone has an opinion on,” remarks Prof Dr Katharina Lugani (Chair of Private Law and Civil Procedure).

The lawyer was a member of the working group on naming laws established jointly by the Federal Ministry of the Interior and the Federal Ministry of Justice and Consumer Protection. The working group’s seven legal experts propose considerable amendments to the naming laws in a position paper that has now been drafted. “The German naming laws are confusing and in part contradictory,” says Lugani. “This can on the one hand be explained by the fact that they developed gradually over time. On the other hand, both public and private law contain provisions pertaining to names and that complicates things.” Both first and last names are largely governed by private law, which concerns itself with acquisitions and changes

arising from the cohabitation of individuals, such as birth, marriage, divorce or adoption. In public law, the naming laws relate more to the relationship of superiority and subordination between individuals and the federal state, so the special circumstances that allow an individual to change his or her name for compelling reasons.

To consider the aspects of naming law regulated in public law first: here, the working group makes far-reaching proposals, for example regarding the use of double family names: “Many parents want to their child to have a double name,” says Lugani. “But German law does not allow this. Double names can only be used by non-naming spouses who may add an accompanying name to their married name.” The working group would like to see this changed so that the children of Mrs Müller and Mr Meier can in future take the surname Müller-Meier – just as Mr Müller and Mrs Meier should both be able to take the married name Müller-Meier. But won’t this soon lead to

confusion, at the latest when Master Müller-Meier wants to marry Miss Schmidt-Huber? “Then both partners must decide on a maximum of one name from either them, so Müller-Meier, Schmidt-Huber, Müller-Schmidt, Müller-Huber, Meier-Schmidt or Meier-Huber – or each of these options the other way round,” explains Lugani. “We take back the freedom we granted in the next generation.” She considers it reasonable for someone to have to decide as an adult whether they wish to use their father’s or their mother’s name in combination with their spouse’s name, or just their spouse’s name. “I believe there is a real need for this,” says the lawyer, who also points out that the double name means that both sets of grandparents are represented while a child is a minor.

Changing first names

According to the working group’s proposals, first names should not be set in stone either. “If I prefer to be called Brigitte rather than Marion, then why should the state care?” Lugani asks. People should be able to change their name once every ten years. “That is undoubtedly our most significant proposal.” According to the current legislation, it is only possible to change your first name if it poses a considerable psychological burden. Katharina Lugani does not find this plausible – after all, so many things in life can be changed, so why should a person have to accept their name as their fate? The state concern for order, which is often cited here as the reason against a change of first name, can be met more sensibly in other ways. Tax or pension insurance numbers are less prone to confusion and error than names, for example.

The arguments against greater freedom in naming laws lie more on the emotional and psychological levels and are based less on clear administrative advantages. If certain numbers are used for orientation and name changes are registered (as is already the case today), then identification is ensured. Even those who oppose the proposed liberalisation have to admit that leafing through old church records or baptismal registers to clarify family relationships has long since ceased to be a part of everyday life.

According to the working group, the legislation on another peculiarity of German naming law should also be amended, namely the last name accorded to children whose parents have divorced and then remarried (Einbenennung). If the non-naming parent remarries and brings a child into their new marriage, then the child gains the name of the naming stepparent. “Mrs Hartmann-Huber and Mr Huber have a child called Jens Huber. The marriage fails and the mother remarries, taking the name of her new spouse, Mr Albrecht. Jens also gains a new surname accordingly and is now called Jens Albrecht. While the mother can revert to her maiden name if this second

“If I prefer to be called Brigitte rather than Marion, then why should the state care?”

— Prof Dr Katharina Lugani
Lawyer

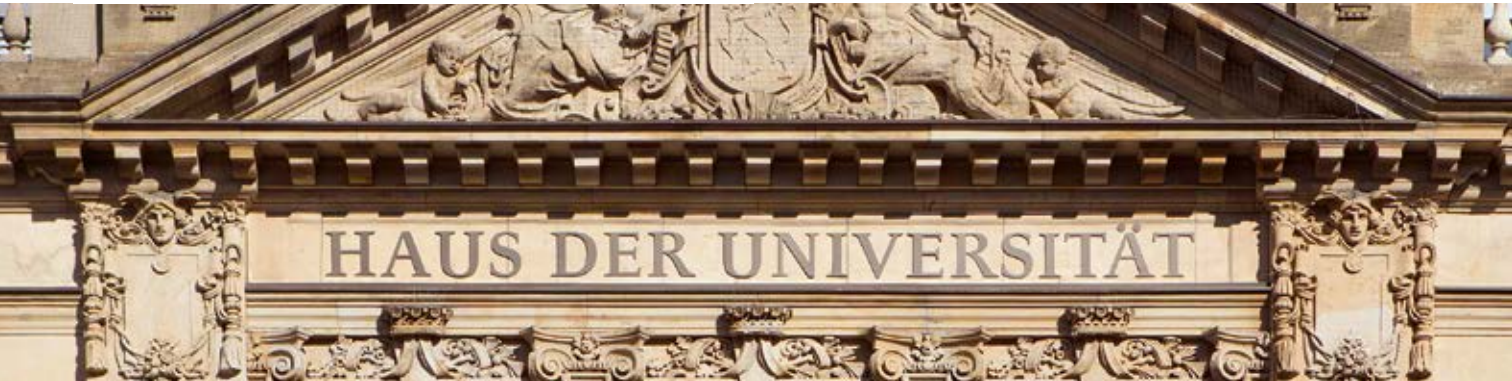
marriage fails, Jens is unable to revert to his birth name. He must continue to bear his stepfather’s name, unless an administrative court determines that a change of name is necessary for his personal welfare,” Lugani explains. So if Jens wishes to revert to his birth name, it would entail a change of name under public law. But this is exactly what is not supposed to happen. Public law should not compensate for public law. “We urgently need a change here because we are not talking about rare exceptions here,” says Lugani. “These are standard situations in family law. Hence precisely this law should offer a solution.”

Due to the coronavirus pandemic, the recommendations of the working group have not yet been incorporated into a draft law. However, Prof Dr Lugani is optimistic that this issue can continue its path into legislation in the coming legislative period.

PHOTO WILHELM MEYER



Harry Heine was himself convinced that you do not necessarily have to content yourself with your birth name. Prof. Dr. Katharina Lugani is of the same opinion.



University House

University House was placed at the disposal of Heinrich Heine University by the van Meeteren Foundation. Its purpose is to provide information and advice as well as foster an exchange between science, culture and education. In the framework of a large spectrum of events, the University offers local citizens the possibility to experience cutting-edge research and research findings and shares university life with the city.

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