"Research is unfolding again"

A research project exemplifying the Collegium Helveticum's transdisciplinary approach: historian Monika Dommann and artist Hannes Rickli talk to Barbara Bleisch about the project Digital Infrastructures and transdisciplinary ways of working.

Barbara Bleisch: Many people talk about transdisciplinarity, but you live and breathe it in your joint projects. You travelled to Gondo, for instance, a mountain village in the Valais that achieved a tragic infamy after a third of it was destroyed by a landslide in 2000. However, you were interested in Gondo for other reasons.

Hannes Rickli: Gondo was on my radar because of a recent newspaper article. It reported on a 'Bitcoin mine' that had been set up there, partly because Gondo has very cheap electricity prices. It's important to understand that Gondo was once also home to a gold mine. The village won me over as a nexus between gold mining, electricity and new forms of money – and thus, ultimately, of digitalisation.

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> Monika Dommann

What does a historian look for in a place where Bitcoin mines are in operation?

Monika Dommann: What we did in Gondo is what historians usually say: 'dig where you stand'! We took a tour and had the entire landscape and emerging infrastructure shown to us. We talked to people and after these discussions we dug deep into history. In doing so, we not only removed the layers of the last ten years – including the landslide and the Bitcoin mine – but also went deep into the 19th century, when water management began in the Valais, the traces of which still shape the village's economy, society and community today.

As a historian you depend on sources. Most historians bury themselves in archives for this purpose. You, on the other hand, talk to contemporary witnesses on site, a process you also document in your book. Those who tell stories always adopt a personal view of reality. But as a historian, you presumably want to know what really happened?

Dommann: According to Reinhart Koselleck, historians mustn't claim anything that's not stated in their sources. That's the number one rule. But especially in the case of Gondo, for example, this gets you nowhere. After having conversations with people, we actually went to the archives, to the libraries, to the media report repositories. We noticed that many stories are circulating – stories that are always similar and reach far into the past, back to the gold rush in the 19th century. The picture thus became more and more complete and consolidated. After two years of 'excavation work' in people's stories and in the archives, our image of this village was entirely different to the one we had in the beginning. This is what research is all about: an open process. It is never finished. What I've explicitly learnt – and what I've known for quite some time as a historian – is that supposedly 'objective' media reports are part of these narratives, and that we therefore have to approach them with a very critical eye.

In this context, a quote comes to mind from the Basel historian Jacob Burckhardt, who had an ambivalent relationship to history: "We would dear-

Dommann: The metaphor of the wave is beautiful. It's important to know or think about your own point of view and interest in knowledge. The image of the wave is often used in history. The French historian Fernand Braudel coined the image of the foam of the wave. The foam corresponds to visible events, such as a press release. Braudel emphasised the need to investigate the forces that set the wave in motion in the first place. You will then encounter the social and economic forces at work. This is precisely what we've done. We've removed sediments down to the 19th century and have thus unearthed the history of digitalisation in this area.

Rickli: As a reporter, what interests me is what is depicted on the surface, what can be read as a symbol. However, when I'm on the road as an artist, I try to find an approach that permits a glimpse beneath the surface, so to speak. At the same time, this means that this approach has to be prepared, either technically or through some kind of operation. In this sense these are quite different approaches.

Hannes Rickli is a visual artist and professor at Zurich University of the Arts.

Rickli: On the surface, this blockchain mine was visible, built in a garage rented by the 'miners'. It's interesting to note that this garage previously belonged to a haulier who used it to maintain his trucks, so the connection between Gondo as a home to 'beasts of burden' – a customs office – and Gondo as a money-making site was already apparent. And all this in a single garage. Digitality begins in the garage. A concrete and emblematic image.

Dommann: Of course, since the invention of the internet, the garage has become a symbol of digitalisation! In Silicon Valley, the people associated with Steve Jobs have all tinkered in their garages.

Rickli: Innovation often comes from hobbyists – from these young, crazy kids. We also met tinkerers like this in Gondo: gamers who dream of striking gold. This

garage and these people can, of course, be captured on film, but at the same time you need another medium to complete the story.

Monika Dommann is professor of modern history at the University of Zurich.

Dommann: It's interesting that image policy also plays a decisive role in digitalisation. We've often discussed the fact that much takes place beneath the visible surface – and perhaps even the most important things. Huge technical installations are being created in secret, as it were, some of which are not public and which feed the need for images of these digital infrastructures. Media that report on digitalisation processes are looking for precisely these images to make the incomprehensible comprehensible – and with these crazy images they, themselves, become a source of hype. In this wave, to continue the previous metaphor, images are generated which in turn become icons of digitalisation. The garage is just such an image.

It was therefore no surprise that we weren't alone in Gondo. We even met journalists from Wired Magazine, the American Silicon Valley digitalisation magazine. People travel to Gondo from all over the world to take similar pictures. And we discovered that our desire to travel to Gondo was, in turn, fed by these pictures. Ultimately, however, our interest was a scientific one, namely to peer beneath these surfaces and the images that attracted us, but we perhaps also got a bit carried away with them.

Why do you say "carried away"?

Dommann: Because, of course, we also became part of a story in which a small village is becoming a new hub of digitalisation. It's an attractive story, because digitalisation is so incomprehensible – and you would never expect to encounter such progress in the countryside in an almost extinct village. I say "carried away" because we were naturally fascinated by the stories we were told. And these stories were not false; they are actually very true. If you're familiar with the history of technology, they often mark the birth of technological advances – they're stories that tell of a future and new beginnings. But especially in times of seismic change, when in some areas no stone is left unturned and when existing technologies or business models are utterly destroyed (in the banking world this is called disruption), many initiatives and ideas also come to nothing and fade away more or less without a sound.

Together you're exploring the genesis and images of digitalisation – but digitalisation is also changing your work. For you, Mr Rickli, digitalisation has also brought complications. Originally, you were primarily interested in 'waste' – the image material that wasn't used – for instance in laboratories where you collected the material that was discarded.

"Transdisciplinary work only becomes productive when it produces conflict."

Hannes Rickli

This 'waste' contained the most interesting stories for you. With digitalisation, this image waste no longer exists, because images are already being embellished, filtered and improved as the photos are taken. What do you work with now?

Rickli: Waste is the hollow form of what constitutes the object in certain arts – and this is where the science begins for me. The waste product offers the possibility of reconstructing what the waste product is disposing of, so to speak. But in the digital age, this waste is now being erased. You could reconstruct it on hard disks like a computer forensic specialist, but that's not the method that interests me. I try to make waste products tangible in a sensory manner. As part of the Wired Nation exhibition (October to December 2020 at the Collegium Helveticum), for instance, we observed the computing processes in a supercomputer by listening to them. In our own way, we tried to bring out the physical materiality of the digital.

To what end?

Rickli: Primarily, actually, to make the process of digital work tangible at all. When calculating weather models from Meteo Swiss, for example, enormous amounts of data are processed every day, which we then consume as weather forecasts. We are never aware of how much energy is consumed and which global networks are necessary to generate this data.

In the wake of the pandemic, we may become newly aware of the opportunities offered by digitalisation. For example, a tracing app is designed to help isolate sources of infection as quickly as possible. Enormous amounts of data are being exchanged globally to help us understand the virus better. How do you assess the risks and opportunities of digitalisation?

Dommann: There's currently an interesting conflict between science and society. Society has a need for the ultimate scientific truth. During the pandemic, we were able to observe in real time that there is no such thing as truth, but rather different truths, some of which are only preliminary findings – different truths from the perspective of virologists, epidemiologists, economists, sociologists and so on. To this day, the perception is that scientists disagree. But the fact that scientists have argued and continue to argue is good news to me. If they hadn't argued, I would have been worried. Especially in times of crisis, arguments and controversy are a good thing. What I find impressive, even intoxicating, about the last few months is that research can be observed in real time. To get back to your question, to understand data as an objective answer would, of course, result in misunderstanding. Data requires interpretation. And interpretation is a process of negotiation and dispute, of permanent falsification. And the public also argues. And even though it's very annoying for us scientists, these arguments are a sign of good science.

We talk about the 'age of digitalisation'. In your opinion, are we still at the beginning of this age, in the middle of it, or almost at the end? Could you

Rickli: I see digitalisation as a process. I don't know when it started or when it will end. But you can feel that there are leaps forward. Corona certainly is and was one such leap. We had to switch to online teaching at the Zurich University of the Arts – while our students, who usually work with concrete materials, could suddenly only communicate digitally. It was a strange shift, but also an interesting one. And it worked! I wonder whether and how we'll return to the old teaching formats, or whether we'll use a hybrid format in the future?

Dommann: I can agree with that. Digitalisation has a long history. It actually began in metric thinking, in thinking in numbers. Of course, World War II changed a great deal; military interests led to sizeable investments and produced concentrated computing power, and huge data centres became ever-shrinking computers. Alongside the historical evolution of equipment, there's also a history of discourse surrounding our digital revolutions. This is familiar to me from other technological leaps; technology has always been categorised and located in relation to people. As a historian, I have the luxury of observing these processes from a distance – with a certain lack of excitement. Nevertheless, I'm always fascinated by the extent to which the development of new technologies also shapes our perception of the world.

Rickli: I'm seeing two movements at the moment, one of which is moving towards virtuality. More and more of our world is being disembodied. At the same time, digitalisation has physical foundations

and effects. This can be nicely illustrated with the Covid-19 app. It works via national data streams that flow into global network infrastructures – but it reacts to physical contact between individuals. These entanglements really touch me as an artist.

In what way?

Rickli: Data is stored in data centres, in buildings made of concrete and steel, which are usually located in some far-flung place for reasons of security and electricity prices. As users and those who benefit from easily accessible data flows, the data reaches us wirelessly. We have no idea what massive infrastructures are required to produce and transfer it. Thousands of kilometres of submarine and terrestrial cables or earth-orbital satellites are required worldwide, for example, and their installation and maintenance usually rely on fossil fuels. I would argue that this gap between us and the environment – I call it the 'aesthetic gap', because human perception is suspended here – is one element of our digital immaturity.

Finally, let's talk about your transdisciplinary approach. Academic quality usually refers to the deepening of a discipline, not an understanding of its breadth – at least, only the former is typically honoured at universities. In your view, what are the advantages of transdisciplinary work and where do they produce conflict?

Rickli: Transdisciplinary work only becomes productive when it produces conflict. Only then do you become aware of other perspectives on the same subject. As a photographer I know this very well. A single image is the result of a huge process. As a photographer, I decide on the moment, the location and so on in which the image is created. Then comes the editorial task of selecting the image and

embedding it in a story. In the end, the individual image leaves no clues to this process. What's really interesting about this transdisciplinary work is the way the subject is extracted by taking different perspectives.

Barbara Bleisch is a philosopher and presenter of the TV show *Sternstunde Philosophie* on SRF. From 2017 to 2019, she was a visiting fellow at the Collegium Helveticum.

Dommann: The scientific division of labour is an invention of the early modern age. Science is becoming increasingly multidisciplinary, and a growing number of specialists are developing who work using different methods and instruments. At the end of the process, an almost romantic longing emerged in the 1980s to reunite the disciplines in what was called 'interdisciplinarity' – as if it were possible to converge again on a perspective akin to that of Leonardo da Vinci …

Like universal scholars who survey the entire world, like Aristotle.

Dommann: Yes, how they used to tap into the whole, break down disciplinary boundaries and adopt new perspectives, ultimately in order to see more, or rather the bigger picture. But that's a romantic image that's doomed to failure. Today, science only works if you're specialised – if you have a specific interest and specific instruments. For me, this is the first requirement. The second requirement is that you reflect your point of view and interests, but also the limits of your own discipline. In other words, I think that you need disciplinary training to be able to work in a transdisciplinary manner. Otherwise, you'll achieve nothing productive – because there's no friction between different points of view.

In art, transdisciplinarity has often been used to create entirely new art forms, which, in turn, have fed back into the individual disciplines. This can be seen in IT developments, for instance, whose origins – in a kind of retroactivity – lie in the gaming industry. Ms Dommann, is it possible to create something new in this way in the humanities?

Dommann: Yes, definitely! History is an old, established and somewhat slow-moving discipline. In the course of the last 170 years, it has developed an unagitated, very precise methodology, which is still more or less shared by all historians today. The disadvantage of this is that sluggish disciplines need external stimuli. It was external stimuli that drove history forward: geographers, sociologists and economists, and then, after 1980, cultural anthropologists, philosophers and myriad border crossers, who were often not trained as historians and therefore looked at history through different eyes.

However, this act of striking out in new directions contradicts what often happens in scientific policy, with the launch of large research fields virtually by bureaucratic decree. The most interest-

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ing transdisciplinary work is usually not produced top down, but bottom up, and often at the boundaries between disciplines, where researchers are interested in one other and willing to work together, even when there are conflicts. Our project was not only transdisciplinary, but also intergenerational. That was new for me, too. Our book brings together papers from a range of academics, from bachelor students to professors. That required a lot of work and a lot of understanding of which standards apply. This was a new, wonderful experience for me. However, it has to be said that we can afford to do transdisciplinary research today, because we've already established our careers. Our younger colleagues are still expected to advance their academic careers. And this is still mostly done on a strictly disciplinary basis. As I said, it's not exclusively a bad thing to develop a thorough methodology and to find your own point of view.

Rickli: Contemporary art is currently associated with a wide variety of reference fields, such as natural engineering, social sciences, the humanities, VR and AI technology. Its media have also become fluid. Painting, for example, is merging with digital image media from the internet. At the same time, I notice that my students want to locate themselves. What is painting today, how does it relate to analogue and digital image techniques like photography or renderings? To what extent is it legitimate as an artist to use ethnographic methods in research without having studied them and their context in depth? The need of our students tends to steer them towards many non-artistic fields during their education, and usually leads them back to a complicated question: which media constellation best allows them aesthetically to communicate their chosen subject area and its contents? To judge this requires – and here I agree with Monika Dommann – experience that goes far beyond an institutional education. That is to say that inter- or transdisciplinarity cannot be taught or learned, but develops on the basis of experience.

Editing: Barbara Bleisch und Martin Schmid
Photos: Andrea Ganz