Roel During (ed)

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Colophon

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Short introduction

While social transformation processes are taking on increasingly complex forms, science seems mainly interested in specialist topics. Instead of seeing human interaction, institutional changes, organizational innovations and governance developments as the focus of research, much research does not seem to be focused on what is going on in society. Carrying out prospective analyzes about trends in complex social dynamics and what is needed to meet the challenges that society sets itself are also neglected. Due to its focus on the reliability of methods and its mode of measuring each other, science has become largely introspective.

How should science adapt to changes in a society that is looking for sustainability for future generations? What role should researchers take to tackle crises such as climate and biodiversity? A possible role is that of action researcher. The essays in this book want to reflect on that action research to examine what it can contribute to social transformations, what experiences there are to share and what we can learn from it through reflection.

The aim is to encourage young researchers, who are concerned about climate change and loss of natural values, to become action researchers and to encourage WUR to be more self-reflective when it comes to its transformative potential.

The essays have been written by the researchers I have been cooperating with in my actions research. I am most grateful for their splendid contributions. I would wish action research to spread and to establish new methodological standards.

Jan Brouwers

Accommodating refugee students

WUR students and staff created the 'WURth While'

The scenery: Syria crisis resulted in a wave of new refugees during 2015-2016

After over a decade of conflict, Syria remains the world's largest refugee crisis. Since 2011, more than 14 million Syrians have been forced to flee their homes in search of safety. More than 7 million Syrians remain internally displaced in their own country and approximately 5.5 million Syrian refugees arrived in the five countries neighbouring Syria. Also, in Europe Syrian refugees arrived and the number of Syrian asylum migrants in the Netherlands peaked in 2015.

Asylum seekers arrive in a strange country often with traumas. Whereas the government has programs to assist them, in the Netherlands asylum seekers are not allowed to work pending their approval procedure. Citizens in receiving towns and villages react in all kinds of ways to accommodate their new guests. In the asylum crisis of 2015 various new initiatives arose and this included ideas made by students and university employees. In Nijmegen at the Radboud University, for instance, two secretaries managed to organize administrative and organizational support in a short time and get scientists enthusiastic about acting as speakers for asylum students. They were given access to the right officials at the municipality and the refugee centres to enable refugee students to come to the lectures. Their initiative aroused interest among the media and the minister of education, who personally delivered one

of the lectures. The two secretaries were awarded a price for their initiative[1] and inspired other universities like Wageningen University & Research (WUR). In Wageningen students from the student association Otherwise[2] made a plea at the university administration to allow English speaking asylum seekers access to courses provided at WUR. However, this was not allowed, due to administrative procedures that did not accommodate for this type of students.

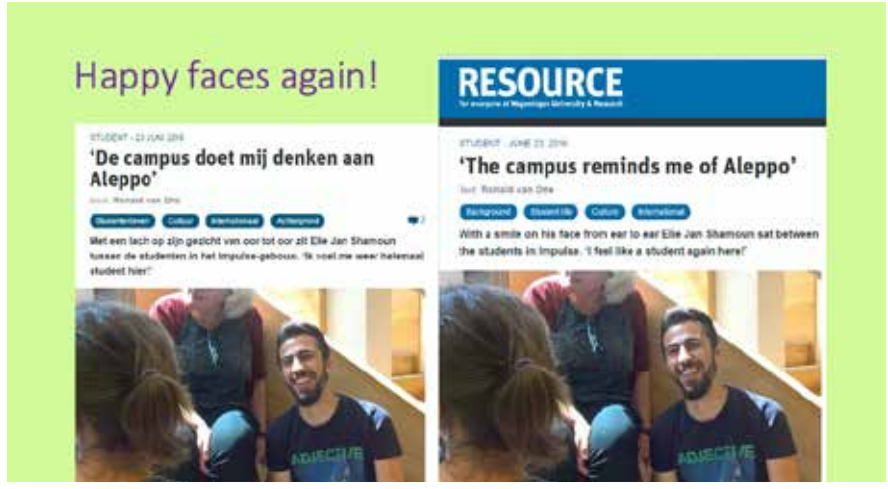
Action

Students were not satisfied with the formal reply that it was not possible to enrol asylum seekers in WUR education. They discussed the issue with WUR employees and the Dutch Council for Refugees (in Dutch 'VluchtelingenWerk'). A cooperation started between students, WUR employees, refugees, and citizens to provide access to free higher education for refugee newcomers in the Netherlands. Students and employees met potential interested asylum seekers in refugees' centres in Wageningen and Ede, explored with them what type of courses they would be interested in, and how to proceed.

The idea was born to have a public event with a few interested refugees and invite a renowned WUR speaker (the WUR teacher of the year). They also made publicity by inviting a journalist from the WUR Journal *Resource* and organising an interview with the potential new students. This was organized in June 2016 and turned out to be a big success (see Image below).

The discussions and interactions resulted a few months later in the WUR administration accepting the idea to allow asylum seekers access to WUR education. WUR administration even became enthusiastic about the idea and started to have joint initiatives with the Universities of Leiden, Eindhoven and Utrecht to organise access to their education for asylum seekers. By 2017 WUR and the University Asylum Fund

1 www.ru.nl/law/cmr/@1034970/universiteitspenning-2016
2 www.otherwisewageningen.org



Picture from the WUR Journal 'Resource', June 2016.

(UAF)[3], a foundation for refugee students, officially confirmed their collaboration and that year WUR aimed to double the number of refugee students at WUR. By 2020 each year some 20 asylum seekers are joining Bachelor and Master courses.

Institutionalized result

The initiative evolved over recent years into a more structured support for helping asylum students, called *WURth-while*[4]. *WURth-while* aims to enable refugees to continue developing themselves, as well as becoming part of society. This is beneficial to the well-being of individual refugees as well as to society in general. Exclusion decreases the long-term chances for participation both in the labour market, and in other roles in society. *WURth-while* therefore aims to include refugees in society by staying actively involved with their field of studies, with students and with researchers and professors in Wageningen. *WURth-while* is open to asylum seekers and refugees with an academic background or with experience studying at a university. They can participate in the program

3 www.uaf.nl/en/daarom-uaf
4 www.wur.nl/en/education-programmes/current-students/wurth-while.htm

up to five years after having received their residence permit. Asylum students can do up to four courses at WUR, one per period. The courses are offered in a variety of subjects and in total some 50 WUR courses are open for them. The *WURth-while* coordinator checks whether the course fits with the participant's knowledge and previous experience. Afterwards, she pairs them up with a buddy, a WUR student who can help them with practical matters and 'show them the ropes' in Wageningen.

The first evaluation confirmed that *WURth-while* participants experienced various benefits of being included and welcomed at the University. In this way *WURth-while* helps newcomers to make constructive use of their waiting period. Participants in the courses feel like ordinary students again rather than refugees.

What can we learn from this case?

This case shows that students and WUR employees can encourage WUR to be self-reflective and change procedures in the face of a crisis. It shows how WUR can be inspired by citizens and colleagues' students and staff from other universities. In other words, that WUR students and staff can contribute to transformation.

Rosalie van Dam

BEING HUMBLE

View on attitude researcher towards a just and nature positive society

Deciding on and doing ‘the right things’ together

Being humble, that is not a natural characteristic of people in western society and not a natural characteristic for scientists who are supposed to have things rights. Still, I argue as a scientist we could be a bit more humble and modest and that will be helpful for nature and in working together with a diversity of actors towards a nature positive society.

As scientists, we like to tell ourselves that we are doing relevant work. We are certainly skilled in doing good, critical and thorough research (‘doing things right’). But who decides what is relevant and what is not relevant? Are we sufficiently able to explain the value of what we do for society? It is a great step that we are increasingly using the SDGs to clarify what we do and what we contribute to. But are we really critical enough of ourselves with regard to the research we do? How and with whom do we determine what is relevant to focus our energy on? And what does ‘doing the right things’ actually mean? For me it means working together with societal and policy actors in participatory action research ensuring legitimate and fair outcomes to people and nature. People and nature, that are connected and influencing each other in so many ways.

Contributing to transformative change

Addressing indirect drivers and underlying paradigms and value systems
The concerns about nature and bending the curve of biodiversity decline requires transformative changes in society. So, we try to aim and contribute to a fundamental system re-organization. This transformative change is different from current practices, related solutions and approaches which are linked to the current dominant economic system and power distribution. Catalysing such transformative changes requires addressing the underlying drivers that cause biodiversity loss, including structural and cultural factors such as policies, institutions, rules, social conventions, values, and norms. These factors reflect and legitimise certain values that sustain unsustainable practices and behaviours in society. There is a need to better understand how to bring about these processes of change in ways that are ecologically and socially sustainable.

Transforming values requires an inclusive approach that brings diverse values and knowledge systems into productive dialogue. To ensure legitimate and fair outcomes to people and nature, such dialogues must recognise and respect the different intersecting positionalities and identities of relevant actors and prevent the exclusion of marginalised voices. This means working with local initiatives and societal actors to facilitate dialogue on structural factors and bridge values about biodiversity across various actors, and to co-produce transformative options and pathways for sustainability that are considered equitable and just.

Multiple pathways on multiple scales and from multiple perspectives
A variety of pathways is needed for transformative change, which also requires experimentation. Systems are non-linear, as such it is not necessarily predictable where innovation and mainstreaming starts. A combination of pathways, fitted into the local context, increases the chance of change. Testing these options and pathways and learning from experiences might help societal actors to further the biodiversity innovations. A reflective and learning approach which includes ecological but also social dimensions such as trust and collaboration for collective action,

values, knowledge behaviours and practices. Also, across various policy frameworks, transformative change is needed and called for as current approaches to halt biodiversity decline are not sufficient. As such, working together with policy on a nature inclusive society can also be helpful as a pathway. These multiple pathways concern also identifying the barriers and trying to find opportunities, in general or specifically for leverage.

Conducting research in and with society

A transdisciplinary action approach – transcending existing disciplinary and sectoral borders and traditional forms of knowledge development – supports the idea transformative change for biodiversity. Therefore, solving the biodiversity crisis needs innovative research on how to achieve transformative change ensuring a sustainable future for both people and the environment across the globe in different natural and societal settings.

In our changing society, scientific knowledge is increasingly seen as an opinion alongside all other opinions. Contributing to the social discussion from science requires a position in, rather than above, society. This appears to be insufficient when science sees itself as an entity that solves society's problems for society. When scientists determine among themselves what are or are not relevant topics for research, the danger of self-referentiality lurks. The more socially anchored science is, the more socially robust its results are. Science traditionally looks for generalities, while society benefits from specific, context-related insights. Value-oriented research is more focused on interdisciplinary problem orientation. However, conducting research in and with society also means that you have to deal with a hybrid and ever-changing composition of actors involved. This brings along many uncertainties. While the classical method of conducting research focuses on searching for generalities, this also takes ownership away from the lives of the people involved. Co-creation then offers a counterbalance to the institutionalization and scaling up of problem-solution combinations.

Role of citizens and citizens' science
A way of involving citizens into research is by citizen science. There are all kinds of forms of citizen science. We think it is important to make a distinction. *Citizen science* (singular and without apostrophe) often refers to the involvement and participation of citizens in the scientific process and in recent years has been developing quickly in all kinds of scientific areas such as psychology, ecology, astronomy, medicine, computer science and statistics, and it is taking a variety of forms. In *citizens' science* (plural and with apostrophe) the ownership of the process of information gathering, analysis and use lies with citizens themselves. In fact, they take over the role of expert, or work in close and equal cooperation with formal experts (like scientists, experts of NGO's and policymakers). Citizens' science doesn't necessary contribute to science, they are not necessarily an aid towards helping scientist get more or other information. Often it is aimed at dealing with a societal problem. Moreover, one could also see citizens' science as plural, as something of a group and not specifically an individual. Seeing citizens' science as something broader, it relates to a changing role and power of citizens in governance processes and in the organization of society as a whole, science included.

Dilemmas on participatory action research
Although personally I see participatory action research as a democratized form of research, for some it feels at odds with doing 'good' scientific research or feels (too) normative. In reaction to this perspective, it goes without saying that you have to be transparent in what you are doing in your research, the steps and positionality you take, how you do this and with whom. For me it is not always useful to have hard dividing lines between research, policy and society. There is overlap and they influence each other. Societal actors do or contribute also to research, as does policy. And as a researcher you are also contributing to policy and hopefully societal practice by making an impact.

Search – and sometimes struggle – for new processes of value creation

Talking about contributing to transformative change and work in transformative ways means as a researcher it is all about theory AND action, which is actually incorporated in participatory action research.

Although being humble doesn't seem so forceful, where urgent action for bending the curve of biodiversity decline is needed. Being humble means you are aware of your possible connection to nature. What if biodiversity is considered a vital network of symbiotic relationships in which humans are an integral component instead of a dominant part. It might even mean that you change the narrative of nature-inclusive society to human-inclusive nature.

And being humble also enables being open to a diversity of perspectives and knowledge. At one hand we need to speak the language of (western) science, at the other hand we are very much aware there are more perspectives, and we have to work together. So ultimately it is not a matter of what is better but rather a matter of connecting and broadening perceptions. And in the – sometimes – struggle to value other practices, modesty, suspending judgement and a bottom up, reflexive, adaptive and learning perspective are helpful in moving together into the direction of an inclusive nature positive society.

Martijn Duineveld

Rage, rage against the dying of the light

Some modest reflexions on opinionated scientists

Introduction

The online newspaper called ‘Energy podium’ has the looks of The Correspondent; a Dutch member-sponsored, online journalism medium. ‘Energy podium’, however, is funded by the fossil industry. Jan Paul van Soest occasionally writes a column for it. He is the author of the ‘ahead of one’s time-’ book The Doubt Brigade (‘De Twijfelbrigade’ (van Soest, 2014)), which focuses on climate obstruction in the Netherlands (a research topic me and colleagues will be working on in the years to come). The book explores Dutch climate sceptics who cast doubt on the seriousness of the climate crisis. Jan Paul van Soest is now a partner at ‘De Gemeynt’ a consultancy firm that provides advice on various topics, including CO2 capture and storage. In one of his columns for ‘Energie Podium’ (van Soest, 2022), he responds to an open letter initiated by Scientists for Future NL and Scientist Rebellion (NOS Nieuws, 2022). The letter, signed by 432 scientists, opposes the Dutch government’s decision to allow gas extraction in the North Sea near Schiermonnikoog. According to van Soest, ‘the signatories are missing the mark by endorsing normative, political statements with their scientific title’ (van Soest, 2022). Because ‘scientists are no different or better equipped than politicians to make such judgements in order to find ways around dilemmas of values and interests (...)’. Nor does he see ‘that signatories

like a forensic psychologist or a lecturer in art sciences can make such choices better than politicians' (van Soest, 2022). In doing so, he said, scientists with opinions run the risk of their scientific profession being taken less seriously.

Van Soest is not alone in sharing his concerns about scientists expressing opinions. Although, debates about whether scientists are permitted to voice opinions, where opinions end and facts begin, or the relationship between politics and science are as old as science itself. In recent years, the discussion has resurfaced. (E.g. see: (Borkent, 2022; Doorn, 2021; Schoenmacker, 2021) This is partly due to groups like Scientist Rebellion (Scientist Rebellion Netherlands, 2024), who share their views, both solicited and unsolicited. They also organize disruptive actions, such as blocking private planes at Schiphol Airport and pasting scientific articles on the windows of the Ministry of Economic Affairs. With the emergence of organizations like Scientist Rebellion, the debate on 'scientist with an opinion' has expanded to the question of whether scientists can also be activists.

We also owe the recent resurgence of attention to this issue to the political party and movement Forum voor Democratie (FVD), which opposes the indoctrination of pupils and students by teachers who do not keep their political views to themselves. 'The party wanted to build a file of examples from classrooms, lecture halls and textbooks. Students and parents who must deal with 'biased tests, politically coloured exam questions, one-sided textbooks, oiko-phobic projects and biased teachers' (webredactie, 2019).

Before we start blacklisting scientists *or* putting them in detention camps, it's worth asking whether scientists expressing opinions are truly problematic. I argue that there are plenty of reasons why scientists who voice their opinions, sign petitions, protest, and share their views via social media are not so much the problem, but rather part of the solution to much larger issues. In fact, they enhance transparency by making scientists' normative frameworks explicit and open to discussion. Pretending that opinions, politics, and power have no role in science is the real problem.

To understand why a scientist with an opinion is not *THE* problem, we first need to clear up a misunderstanding: that statements by scientists are automatically scientific statements. Secondly, it is important to recognize that science is never value-free. And thirdly, knowledge and power are inseparable.

Statements by scientists are not automatically scientific statements

Science involves the construction of scientific truths and facts, which are disseminated in peer-reviewed papers and books and recognized as scientific within a specific discipline or field. Science is dynamic; today's facts may become tomorrow's falsehoods, and what is true in one scientific discipline may not hold in another. However, certain truths within science achieve consensus and stability over time, such as the reality of climate change and the role of fossil fuels in contributing to it.

Science is the result of scientists' work, but not all communications from the scientific community are necessarily scientific. For instance, a scientific statement *looks like this*: 'The aforementioned ocean, atmosphere, and sea-ice responses strongly influence the regional climates across the globe. The European climate is significantly different after the AMOC collapse, whereas for other regions only specific months undergo significant changes.'.

It does not look like this:
'Do not go gentle into that good night,
Old age should burn and rave at close of day;
Rage, rage against the dying of the light.' (Thomas, 1951)

Nor like this:
'Could you please pass me the peanut butter?'

A Prof. Dr. Ir. who asks for peanut butter or expresses an opinion is simply making a request or sharing their viewpoint. It does not make the

statement scientific. And in the Netherlands, it's not prohibited (yet). Some climate sceptics, for example, hold scientific credentials but are often not climate scientists. When they appear on television or write on their blogs, they tend to cherry-pick from scientific and semi-scientific literature rather than base their statements on the consensus within the scientific community.

Science is never neutral or value-free

Science begins with the selection of a research subject, which inherently involves normative choices. For instance, if you aim to address particulate emissions, you could study the workings of a chemical air cleaning system to enhance filter efficiency. Alternatively, you could research alternative fuels that emit fewer particulates or explore transportation modes independent of fossil fuels. A scientific statement or set of facts does not inherently express a value, while a normative statement does not present a fact. However, on the lengthy journey from 'everything that is the case in the world' to the moment when something is considered a fact or truth, numerous choices are made, and various norms and values become integrated into the fact. (Mol, 1999)but, if they clash in some places, depend on each other elsewhere. The notion of choice also presupposes an actor who actively chooses, while potential actors may be inextricably linked up with how they are enacted. These various questions are not answered, but illustrated with the example of anaemia, a common deviance that comes in (at least

Opinions can reflect your worldview, the discipline you work within, and the expertise that shapes your frame of reference. For instance, it's unlikely that vegans would dedicate their scientific career to 'animal-friendly' slaughterhouses, as doing so would essentially legitimize a system they oppose. Similarly, the decision to research CO2 storage, which could validate the drilling of new oil and gas fields, is a choice. Scientists, experts, or consultants can also leverage their knowledge and skills to explore alternative solutions.

Power and knowledge are inextricably linked

The construction of scientific facts and truths requires funding, and the sponsors of scientific research and expertise, including companies, governments, NGOs, and philanthropists, often have a vested interest in funding certain research projects over others. They may also seek to influence the choice of study subject to align with their agenda, and when the research outcomes favour their interests, it's cause for celebration. Maastricht University, for example, offered Saudi state oil company Aramco a selection of research projects tailored to match the company's corporate interests and highlighted PR opportunities to enhance its national profile. 'Two of the proposals focused on 'biobased materials', another on Big Data, and a fourth on degrowth – an economic concept that does not prioritize economic growth' (Pereira et al., 2024). Aramco was, surprise!, surprise!, not keen on a study on degrowth...

Partly due to the influence of fossil fuel companies and governments that prefer to combat the climate crisis without exploring real changes that could swiftly reduce CO2 emissions (such as reducing air travel, adopting plant-based diets, and exerting pressure on the fossil fuel industry to rapidly decrease production), the environmental sciences and climate debate, both within and outside universities, have been dominated by technofix thinking for many years: the belief that we can solve environmental problems with more technology, popularly known as symptom control. Consequently, a significant portion of research budgets has been allocated to this approach, leaving little or no funding for alternative knowledge and potential solutions that could truly make our Earth more habitable, such as degrowth thinking and the growing interest in indigenous epistemologies – ways of knowing and knowledge practices that have been overlooked or dismissed by the prevailing paradigm within and outside of science.

An important reason to rely on technofixes partly stems from the fact that research funders have a vested interest in resolving the problems they cause with technological solutions, without questioning the existence or the right to exist of their companies. Those who profit from

selling animal products or fossil fuels are not inclined to fund research demonstrating that jackfruit is a nutritious meat substitute or that reducing consumption, or how to end subsidies, or how to implement and enforce stricter regulations to decrease CO2 emissions. Thus, which questions are answered, and which are not depends largely on the power relations within which knowledge questions are formulated.

Faking neutrality, that's the problem

Thanks to the field of science studies, which explores the relationships between knowledge and power, along with investigative journalism, we understand that the divisions and connections between science and politics, and between scientific and normative statements can be very complex in practice. While it's easy to acknowledge that the concept of neutral science or neutral scientists is an illusion (because normative elements are always embedded in facts, and scientific knowledge cannot escape the power relations within which it is shaped), there are still many scientists and non-scientists who accept this illusion as truth and view it as an important normative starting point for their work.

As Esther Turnhout puts it: 'Many see neutrality as indispensable for the production of truth, but it is not just unattainable, it is actually harmful' (Turnhout, 2024). She quotes Julia Steinberger who is also very critical of faking neutrality to serve the mighty interests of the (fossil) industry:

> "in order to protect existing powerful industries. And ... we are told within the IPCC [that] you shouldn't be political, you shouldn't be policy prescriptive. But we are acting in a politicised do-main. Climate change has been politicized by these industries ... we have to give ourselves the right to not just observe ... If we don't fight to expose these interconnections ... we will reproduce them and we will constantly be contributing to make things worse (Climate Justice Coalition, 2021)."
> It is well known that the carbon removal technologies that Steinberger refers to, including direct air capture, carbon storage, or massive tree planting are extremely unlikely to ever be effective as sufficient scale. Yet, the existence of these technologies in modeling does mean that their im-agined, potential climate benefits can be calculated, and, as we are currently witnessing, these imagined benefits are being used to avoid and delay the reduction of emissions. As a result, the IPCC serves vested interests and reproduces the status quo, while operating on the problematic assumption that the incorporating of these technologies in modeling is neutral.'

Another example is the scientists, experts, and consultants funded by the fossil fuel industry who deny and trivialize the contribution of fossil fuels to climate change. Their goal is to sow doubt among politicians and citizens about the causes of climate change to protect their own business interests. These 'merchants of doubt' present themselves and the misinformation they spread as scientific, objective, and factual, masking their true motives. (Ekberg et al., 2022)

Those who present scientific truths about the world and ideas for its future as facts or absolute truths often legitimize and normalize dominant ways of thinking, making alternatives unnoticed or dismissed. The norms and values embedded in the creation process of these facts are naturalized, becoming part of widely accepted assumptions. Alternative views are easily dismissed as "unrealistic" or "ideological" as a result.

Experts or scientists who pretend to be apolitical or detached from the power relations behind their statements are far more dangerous than those with opinions. By denying the politics inherent in their statements, they become "hyper-political."

How to escape the inextricable connection between knowledge and power?

Can we escape the inextricable connection between knowledge and power? Can we free facts from the normative or ideological relations and contexts from which they arose?

No.
We cannot.
There is no escape.

However, we can serve both science and society by making these relationships constant subjects of inquiry. This allows us to identify and understand our blind spots more clearly. Recognizing that research funding, whether from government or industry, often shapes the questions and consequently the answers in a certain direction, does not imply that funded research is untrue, incorrect, or corrupt. Knowledge is inherently influenced by the powers that enable it – money, networks, dominant presuppositions. Therefore, the only approach is to acknowledge these powers and subject them to constant self-reflection. Ask yourself the following questions:

- Under what conditions has this knowledge entered the world?
- Which ideas, truth claims, discourses, et cetera. do we take for granted?
- Are alternatives possible?

And to add some complexity, we should also address the following questions:

- What roles does science (scientific knowledge, scientist) play in various fields, such as science, politics, the legal system, and economics?
- What are the dynamics of these different fields? (As a 'fact' moves from one domain to another, it becomes subject to the dynamics of the field it enters, leading to unpredictable effects).
- What are the expectations placed on knowledge?
- Under what conditions is knowledge interpreted?
- What inclusion and exclusion mechanisms are at work? (In other words, which knowledge is emphasized and which is marginalized?)

In short, if we want to maintain the boundaries between science and politics, between expertise and opinions, we don't need an opinion police or a blacklist of scientists with opinions. On the contrary, it's crucial to consistently make explicit how interests and truths intersect in the production of scientific knowledge and expertise. Scientists, teachers,

and consultants, in particular, should continually communicate their normative assumptions and be aware of which interests they serve and which they may overlook.

What these times call for are experts who are conscious of the knowledge/power dynamics they perpetuate and legitimize, and who are willing to step outside of dominant thinking to take a stand. The formula is simple: observe, analyse, understand, question, rage (if you feel like it), and reflect.

P.S.

From this perspective, Van Soest's column, with which we started the essay, is particularly interesting. I believe the answer to his question about whether it is wise for scientists to make normative statements, on topics that, in his estimation, they do not fully understand, leans towards: YES. Whether it is always strategic to express an opinion in a particular way is something a scientist must weigh on a case-by-case basis. It doesn't hurt to reflect on the production of one's own opinions, the chosen medium or action and those of others.

One may for example question whether it is strategic to express opinions on energiepodium.nl, a platform funded by the fossil industry. Facilitating dialogue on that site keeps the fossil industry at the table, it legitimises them allowing them to nudge the direction of the energy transition and their role therein. Many of the articles on the site legitimize the fossil industry's existing interests, with only occasional hints at a more radical sustainability transition. The website aligns well with the image of an industry that claims to be sustainable while continuing to heavily invest in fossil fuel extraction. There seems to be little critical self-reflection on the functioning of the fossil industry. For that, one would need to turn to outlets like 'Follow the Money', 'De Groene Amsterdammer', or the 'real' 'De Correspondent', with their own original 'De Correspondent'- layout, funded by members and without fossil sponsorship.

Roel During

Action research: changing positionalities beyond control

First experience

I did my first action research when I had just started working. I received a question from the Working Group of Indigenous Peoples in Amsterdam if I could help with the defence of Innu Indians in Canada, who were overflown at low altitude by Dutch F16 planes, exercising low level flying. The Indians tried to resume their original lifestyle to overcome problems like alcoholism and abuse, and in doing so they moved with the caribou herds into the river valleys. They were often in a canoe when suddenly overflown by an airplane at an altitude of 30 m with 120 decibels on the ground. Such is an unbearable experience for them that they had very frequently. Children jump out of the canoe into the water out of sheer fright. My role was to ensure that what they observe in terms of changes in nature is included in the official Environmental Impact Report and that the summary of that report will be readable for Dutch members of parliament. That was important because the low-level flight contracts had to be re-signed with the Canadian government. This project which I was allowed to do for free, was very instructive for me and a permanent source of inspiration.

Knowledge and democracy

Small problems can be solved by anybody with a minimum amount of creativity or knowledge about solutions. Big problems often call upon specialist and deep knowledge on specific subjects. There is however

a category of existential problems that requires the involvement of the whole of society, to tackle. Solutions must come from a plethora of actors, each contributing in their own way. One can think for instance about biodiversity loss or climate change. For such categories of problems, the traditional cooperation between governments and science can become a stand in the way. I will explain this below. Its explanation requires some elaboration on the relations between democracy, power and knowledge in view of sustainability. Subsequently I will discuss the dishonesty in arguments against action research. This opens new horizons of combining action and research, which I will discuss and advise on.

Scientific knowledge almost exclusively aims at solving a problem as perceived by the assigner, or by the one who raised a question. Knowledge is then used to legitimize action by those in control and those who have power. As soon as large institutes and universities start to get involved in very complex issues, depoliticization naturally arises. Depolitization means that decisions on measures that affect society are taken outside or partly outside the political arena, in the so-called science policy framework. Science and decision making become entangled, often because of the use of decision supporting models. Models are used to investigate the effect of certain measures that the government can take, for example. These models are becoming so complex and complicated inside, that the knowledge they contain is inaccessible, and cannot be shared with ordinary people who are also willing and able to contribute to the solution of problems. Especially if the measures are controversial, in other words if they are detrimental to one part of society but may be necessary for another part of society, then it is also convenient for the government that the inside of a model is complicated and inimitable. The model tells what needs to be done and the government can refer to it: 'in this model, all the knowledge is brought together to solve the problem and it provides us with a good perspective for action', or so the thinking goes. This is referred to as Black Boxing (Van Assche et al., 2014). Black Boxing is about finding the legitimacy for action in non-transparent or inaccessible forms of knowledge. What you see here is that knowledge development and political decision-making merge seamlessly. In this way, research then becomes part of politics.

This mechanism in which knowledge and power are so intertwined, and in which lack of knowledge will necessarily lead to lack of power, may also be an unintended side effect of well-intentioned politics in our society. For people, the intensive collaboration between government and science is reassuring, because they say that the government knows very well what is good for society. But there is also a major disadvantage to it. The disadvantage is that ordinary people no longer take the trouble to understand an existential problem and to find out what they can do to solve it. A society in which governments, companies and institutions are set up to unburden people and to solve problems for citizens, can lead to people being kept ignorant. Ignorance here has the meaning of not properly understanding what their contribution is to an existential problem and to the possible solutions. Ignorance can both be an unconscious and a wilful attitude on the part of citizens. For example, one may not want to know what indirect effects there are of things that one buys or energy that one uses. People may wilfully choose to be unconscious (Vonk, 2023). This attitude can be complemented by criticizing others who are wilfully conscious and act concordantly in a just way. They may be scorned moral knights. According to Vonk (p. 103), wilfully ignorant don't really disagree with them, but protect their ego.[5] Deep inside they agree but are not able to act likewise. This results in a deeper entrenchment against the arguments that are grounded in more knowledge and context. This is seen as paradox, standing in the way of a moral just society.

The intentional pursuit or unintentional consequence of keeping people ignorant can be a breeding ground for all kinds of conspiracy theories or *wappie* theories because people are worried about what is going on and what needs to be done about it. However, they seek refuge in simple, clear connections, while problems are layered, complex and confusing. In an ideal society and in an ideal democracy, everyone has access to the knowledge they need to contribute to the tasks and challenges that society sets itself.

5 Materialism can be the result of an ego defence mechanism (Morrison & Johnson, 2011)

Such societies did exist, such as in the Carpathians in the 19th and beginning of the 20th century, among many others (see Graeber & Wengrow, 2021). This society in the Carpathians involved an ethical group of Hungarians who had 70 different wild plants on their diet and practiced agriculture (Dénes et al., 2012). There was no difference in knowledge based on which power differentials existed. Everyone knew all the edible plants by name, and everyone was engaged with agriculture. This quickly changed with the neoliberal system imposed on this society, which led to division of labour, dependencies, and large differences in the degree of knowledge about agricultural practices and ecology. This shows that societies have existed wherein there was no power asymmetries based on knowledge or access to knowledge.

Coming back to ignorance in its two forms, the unconscious ignorance of society resulting from politics and policy and the willingly unawareness of citizens, can sustain or even reinforce each other. As mentioned, ignorance can be an unintended side effect of a government that wants to solve society's problems itself. However, it can also be the intended effect of commercial parties gaining more power in a consumer-centric society. In 'Against the Production of Well-Being', Ivan Illich goes that far that he believes education is meant to keep citizens uncritical and merely focused on fitting persons in the existing organisation of the consumer-based society (Illich, 1974). An alternative would consist of a convivial society, in which power inequalities are kept to a minimum and people don't need governments, schools, laws and institutions to solve problems. This is the society anarchists believe in. To a certain extent, anarchism arguments are quite spot on in the light of the problems we are dealing with.

Also, the philosopher David van Reybrouck (2018) argues that democracy is rapidly being reduced to elections, when advocating for more direct and active forms of democracy. Van Reybrouck makes the argument that modern democracy was designed to preserve the rights of the powerful and keep the masses in line, as to give the populace a voice. He argues that there are forms of government, what he calls deliberative democracy, wherein citizens can make better decisions than politicians. He

tries to allocate power to the people in search of change.[6] But how to do that in view of the reality that people are influenced and disciplined not think too deeply about all the purchases they make, but rather follow the influencers who tell you how happy a product makes you. Environmental-friendly behaviour is not a simple choice one makes on a sunny day. It is grounded in life histories, personal norms, identity; and for adolescents it is shown to resonate with the norms and behaviour of parents (Balunde & Perlaviciute, 2023). Not surprisingly, it turns out that environmentally friendly behaviour, and how it is embodied in a person, can change in social interactions. This notion opens a promising avenue for action research: to bring knowledge to those who normally don't have access and use it to enhance social interactions that aim at living in a better world.

Context matters

Researchers can also be ignorant if they don't think further about the question they have been asked and what the effects of their answers might be. A very short '*horizon of relevance*[7]' is a sign of ignorance. Alternatively, a view that everything is connected to everything else is intelligent, but also impossibly complex. One serious problem about context and contextualisation we need to discuss shortly. Science is rather focused on generalisations. Researchers are looking for general patterns, mechanisms and so forth that can be recognized in other contexts. In doing this, unintentionally, they reduce complexity of the case they are studying and loose context. Action research however is a form of con-

6 The democratization of knowledge, i.e. making knowledge widely available to everyone, played an important role in the 1960s and 1970s. During this time, for example, science shops were set up. It was a time of pluralization in which all kinds of groups went in search of their own interpretation of sustainability. Whether it's education (Free education), food production (Kleine Aarde) or sustainable living (Hobbitstee), there were experiments everywhere that were well thought out. It is also during this time that action research was invented and practiced.

7 Which means that things or events that have no direct relations to a research question are categorically considered irrelevant and as a result context doesn't even exist.

textualization. Action research involves looking for situations in which all sides of a problem manifest themselves in their full extent and complexity and in which many mechanisms are at work at the same time, so that it is not possible to decontextualize or to simplify relationships. Your research and your life as an action researcher at that moment may become intertwined.

Axioms and sacred cows
Arguments used against action research are mainly about the fact that action research is not objective. The action researcher allows himself to be swept up in the ideology of the people he works with. As a result, the reputation of science is put in a bad light. It is good to subject this position to a critical analysis. We do this in three ways. The first is about the question of whether research without action is possible. The second is about the question of whether there are research questions that are neutral and free of values. And the third is about the question of whether there are methodologies that do not contribute to the colouring of the research.

There is action in every research; there is research in every action
Actually, doing research is an action in itself. By doing research, you change insights, you change the basis of knowledge with which problems are solved. You make it possible for others to take action based on your research results. In any case, conducting research and disseminating your research results always contributes to a political discussion that can therefore go in a certain direction. On the other hand, you could say that in every action there is also research. An activist never has a precise idea of what he will achieve with his action and that is why he will always look around him very carefully to see what reactions to his action are. Strictly speaking, this is also a type of research. The question for the action researcher is where that knowledge ends up in society and whether everyone can use it.

There is bias in every research question
There are no neutral and strictly scientific research questions. There is always a perspective from which a question is asked. A question such as 'make the entire web of relationships around climate change visible and

it doesn't matter where you start', will never be asked. There is always a perspective and starting point, even in the language we use. This starting point is sometimes in nature, but sometimes in the government, often it is in the economy or with citizens. In almost all the questions, the perspective is already included as to who is legitimized or who should be encouraged to act.

There is dishonesty in every methodology
As a researcher, you tend to think that you have an independent position from which you can observe the world. That the world around you can be studied from a point of view that has no relation to that world. You see the world, but the world doesn't see you. Only the result of your research, the report, or the article, gets into the world in the end. Nothing could be further from the truth. You can't completely detach yourself from a certain context. Life consists mainly of relationships that in themselves go through a continuous process of change. The idea that you are an immutable fixed element in a changing world is a fiction. This is explained very nicely by the Nigerian philosopher Bayo Akomolafe.[8] Bourdieu also paid attention to this in his writing on participant objectivation. Bourdieu also says that it is impossible to eliminate yourself and your character and everything that has shaped you and everything that has a relationship with you, to do objective research. Objectivity exists as an aspiration, but not as status. An honest and transparent way to deal with this is to say who you are and how your person shapes your observations and the research. That's a way to objectify your research. That's a much better path to take than if you say you're objective and, in the meantime, consciously or unconsciously conduct subjective research. Standing up for a public interest in research also leads to subjectivity, because who knows what is good for society? As an action researcher, you realize that you are connected to the world around you, in terms of norms and values. By making that connection explicit and naming it, you objectify your position in the research.

8 See his essay You're not a self, www.bayoakomolafe.net/post/you-are-not-a-self

The bumpy path of the action researcher

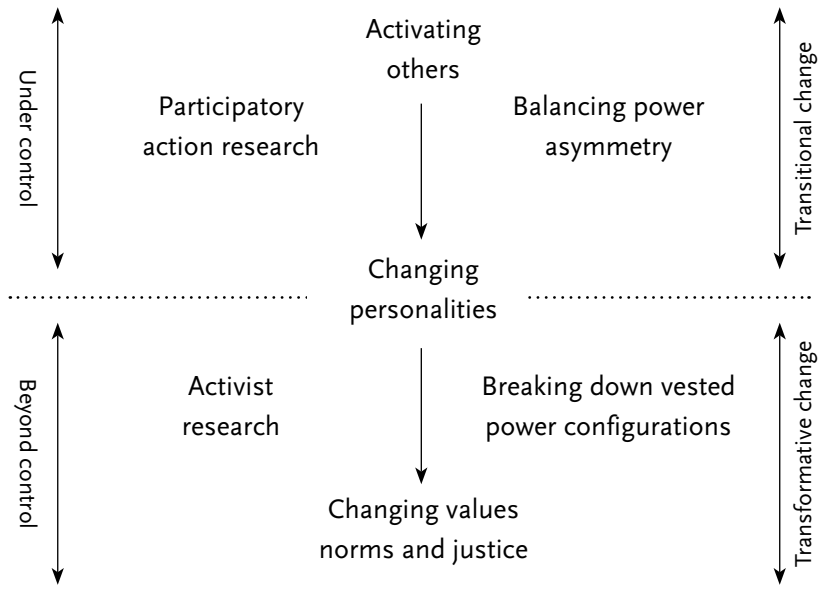
Now that we have talked about the relationship between knowledge and democracy, how it is formed and decided in the cooperation between governments, universities and institutes, about conscious and unconscious forms of naivety and ignorance, after we have broken down the sacred cows that are meant to keep science operation in concordance with existing power relations, the way is open for action research. What follows are some practical and philosophical recommendations for those who want to embark on that path.

As an action researcher you look for situations and problems where the troubles are biggest and where people are active and motivated to contribute to solutions. That's where you can make a difference. You are aware that there is not one solution for a wicked problem, and that diversity of solutions is fruitful. You leave the comfort zone of science. You ask yourself what knowledge the various groups need to contribute to a solution towards sustainability. But you also raise the question of what blockages there are. To do this, you must be able to understand the power game or the power configuration of a sustainability issue. You could then investigate how knowledge can lead to empowerment in that situation.

There are different levels of action research. A basic level of action research is when you provide other people with the knowledge to act. This can also be done in the form of Participatory Action Research. Then you may work together with a group that develops a sustainability initiative to gain the knowledge on which they can act. You can also go one step further by using your knowledge and the status of the institution where you work to change the balance of power. You can empower to put groups in better positions, can remove blockages and reduce power imbalances. You may be able to demystify the arguments of those in power positions and bring justice in the discourse. Doing that, you will set in motion a process where no one is really in control of the balance of power. But you can go one step beyond that by doing research that goes against the power relations that stand in the way of sustainability. Therefor you may combine activism and research and bring knowledge to the barricades as a researcher. This is a dangerous path, but it is not impossible. It requires a lot of reflection, transparency, and honesty about your motivations and interventions. It might be that your life, your learning and your research become entangled.

For the sake of clarity I have outlined the different levels of action research below, which can be read as an action research ladder.

Levels of action research



It is up to each researcher to choose a position in the field of action research. How far he wants to step out of his comfort zone, what he finds acceptable in allowing emotions in his work and his doubts in the elaboration of the good intentions of governments and affiliated institutions. I hope and expect that many new up-and-coming talents, in view of the major challenges that concern the world, will enter the path of action researcher.

Zoë van Eldik

From aktion to action

An essay concerning the housing crisis in the Netherlands

'New housing form on the rise: the housing cooperative', headlines a Dutch news report on the 16th of September 2023 (NOS). In a video underneath the headline, reporters are visiting housing cooperative 'de Warren' in Amsterdam. One of the initiators of de Warren tells how he and a group of friends started a housing cooperative and thus, as a collective, built an affordable housing complex on one of the most expensive building grounds in the Netherlands. Officially, an association owns the property. The residents rent their homes from the association and thus indirectly from themselves. Unlike common property developers, the association has no profit motive and only an interest in maintaining a comfortable and sustainable home in a beautiful and green environment. Therefore, the rent does not need to be increased and can even come down when the association's mortgage is paid off.

De Warren is the first completed housing complex built by a housing cooperative in the Netherlands. The initiative has been followed with interest by local governments struggling with a huge construction task. By now, encouraging housing cooperatives is being explored by several municipalities as an alternative to issuing building contracts to commercial developers. The idea is that this will make more housing available to people with low and middle incomes. Collective private commissioning [*collectief particulier opdrachtgeversschap*] also allows future residents to decide what their homes will look like and how a home will be built.

In the report about De Warren, a narrator says that the idea of housing cooperatives had come over from Germany and Switzerland. This surprised me: why all the way from there? And why is this new? Surely this is the same as a housing group.

The Umbrella Factories: housing cooperative avant la letter

The reason for my surprise is that since 2019, I have been partly living with my partner in what are called 'The Umbrella Factories' [*De Paraplufabrieken*] in Nijmegen, the Netherlands. Partly, because everything that happens in and around The Umbrella Factories is decided democratically. If you live there as a couple, there are two people who can always vote in each other's interests. It was once decided that that might be unfair to the other single residents. Therefore, I may call myself a 'bonus-housemate' and not a full-fledged 'Umbrello' [*Pluriaan*]. Nevertheless, The Umbrella Factories feel like a second home to me.

The Umbrella Factories are divided into seven homes and about 20 businesses (some more active than others). Each user of the property pays dues to the Umbrella Factories Income Acquisition Foundation [*Stichting Inkomstenwerving Paraplufabrieken]* and contributes to the maintenance of the property. For instance, a collective maintenance day is organised three times a year and most users of the property are on a committee. It is a statutory requirement that if The Umbrella Factories are ever sold, all proceeds will be donated to charity. All investments made in the premises are therefore in favour of preserving The Umbrella Factories as a collective initiative and not for personal gain.

The organisation of The Umbrella Factories is very similar to the concept of a housing cooperative. However, the creation of The Umbrella Factories proceeded with great opposition from the municipality rather than interest. On the night of the 25th of July 1982, between 02:00 and 03:00, the founders of The Umbrella Factories first crept into the premises through a narrow side window. The squat went well until the police

came and tried to break through the front gate. While one half of the squatters barricaded the gate, the other half climbed down through the ivy at the back of the property to get reinforcements. Via squatters' pubs and through the squatters' alarm call list, people were summoned from all sides to pelt the police with pebbles and street rubble at the front of the building and enter the premises at the back. Eventually, about 40 people were inside when the police retreated because a bunch of punks from a nearby city arrived and threatened them with chains.

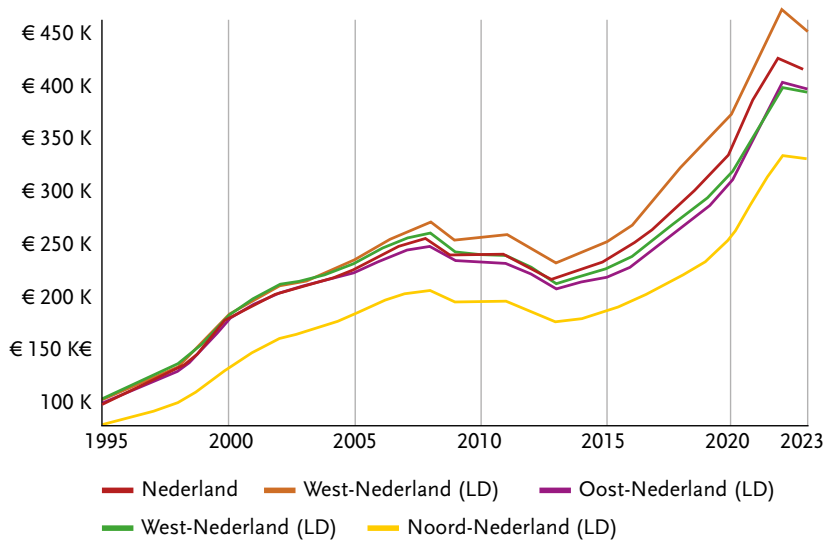
Housing crisis in the 1980s

Like the Umbrella Factories, many more properties were squatted in the Netherlands between the 1960s and 1980s. Squatting was (and still is) considered a radical form of 'aktion'[9] *[aktie]* against housing shortage (Canon Volkshuisvestiging). In the late 1970s and early 1980s, the housing shortage in the Netherlands reached a low point that escalated into major riots between the police and the squatting movement in Amsterdam and Nijmegen. One of the most violent confrontations of this time took place in 'de Piersonstraat' in Nijmegen. Cause of the riots was a plan by the municipality to demolish the Piersonstraat premises that were occupied by squatters to make room for a parking garage. This was considered unacceptable by the squatters. A roof over people's heads had to take precedence over a roof over cars. Determined to defend their homes, the squatters began barricading the street in large numbers.

In February 1981, the municipality attempted to clear the premises with full force. Besides usual police equipment, ME buses, helicopters, tanks, water cannons and tear gas were deployed. Most people in Nijmegen condemned the amount of violence used by the police that night. To

9 In 1954, the first post-war edition of the 'green booklet' was published in the Netherlands. The booklet contained the official guidelines for the Dutch language. According to the booklet, so-called bastard words (words granted from another language) could be written in two correct ways: according to the preferred spelling [aktie] and an authorised spelling [actie]. In 1995, the preferred spelling was abolished.

Barricades in the Piersonstraat (Nationaal Archief).



Average increase of the selling price of houses in the Netherlands between 1995 to 2023 (CBS).

show their disapproval to the municipality and the mayor, large public demonstration was organized on the night of eviction. In the end, the car park was never realised.

Legalisation of squats

Because most people were fed up with the violence surrounding the housing shortage, some municipalities, including Nijmegen, opted for a strategy where squats could be legalised. In most cases, this involved using municipal housing companies or housing associations to convert the premises into youth housing or live-work premises. In some cases, squatters were keen to start a so called 'housing group' themselves. Formally, this could be done in two ways. Through a non-profit foundation or association, like The Umbrella Factories and De Warren, or by individually investing in a share of a collective association that buys a property. In the second form of organisation, it was formally noted that residents were entitled to a share of the value of a property, measured against the time they live or have lived in that property. Individuals who once managed to buy into a housing group for next to nothing sometimes saw the value of a property increase fivefold in the following years (see figure). A lot of housing groups that chose the second option have split eventually after people starting to claim their share of property ownership.

Why the housing crisis was never solved

With the legalisation of squats, social discontent over the housing shortage started to decrease. Only a small fundamental core group of squatters refused to cooperate in a framework provided by government authorities. Most young squatters, however, were happy to have found a way to secure a roof over their head. Meanwhile, another crisis was at play on a global scale: the oil crisis. Consecutive Cristian Democratic prime ministers Dries van Agt (1977-1982), and Ruud Lubbers (1982-1994) had to face the thankless task of implementing austerity measures to combat economic decline, caused by the oil crisis. Both felt that

the government spending on social housing had gotten out of control, but it was Lubbers who finally dared to do something about it. Under his governance, public housing decentralised from the state to the municipalities who also had to deal with major budget cuts. Social housing was to go only to people with very low incomes and the housing shortage, was to be solved by the market.

In the early 1980s, 40% of the Dutch population lived in social housing[10]. These were not just low-paid workers, but a mixture of low- and middle-income households, including teachers, shopkeepers, nurses and academics. It was mainly these people, who were suddenly labelled as morally reprehensible 'skewed tenants' *[scheefhuurders]* that were abusing the system after the Lubbers administration introduced a strict social income limit (Hochtenbach 2022). Moreover, as Western European politics became increasingly liberal, the belief grew that everyone should buy a house. According to liberal rhetoric, renting was a waste of money. The idea was that if the demand for owner-occupied houses increased, owner-occupied houses would automatically become cheaper too. In reality, however, 'the market' only proved little interested in building houses for people who fall just above the income threshold for social housing. Nowadays, according to the Dutch Central Agency for Statistics, 13% Dutch adults, mainly consisting of young people living with their parents, single parents and the elderly, say they would like to move but are unable to for financial reasons (CBS 2022). To illustrate, an average owner-occupied house will cost €418,000 on 2 May 2024. To get a mortgage for that amount of money, you need an income of more than €90,000 a year. In the private rental sector, an average of €17.77 per square metre applies. That adds up to a sloppy €1,450 for an 80-square-metre flat these days.

Ironically, cheap housing was once precisely a liberal position. When a rent increase for high and middle incomes was first to be introduced by housing corporations, Liberal member of parliament Rudolf de Korte (1990), called this 'punitive tax' *[strafbelasting]* an 'ineradicable socialist pet peeve' *[onuitroeibaar socialistisch stokpaard]*[11].

10 Currently, this is 28% (SCP 2020).
11 SGD_19891990_0000738.pdf (overheid.nl).

Why barely any new housing groups have emerged

Now that the demand for cheap housing is so high again, you might think that it could be a reason for people to start squatting again and to starts more housing groups. The possibility of doing so in the same way as in the 1980s, however, is not there anymore. After the 1990s, remaining squatters became an increasing thorn in the side of capitalist Dutchies. Especially for property investors who had to postpone their plans every time a group of rebellious young people moved into their properties. Therefore, in 2010, the Squatting and Vacancy Act *[Wet Kraken en Leegstand]* was implemented which severely restricted opportunities for squatting or leaving properties unattended. Anyone who squats a vacant property now can be arrested for a crime by order of the property owner. In turn, the property owner must be able to prove that he or she has concrete plans for a suitable use of the property.

The law has had an effect: the squatting movement is the Netherlands is now a highly marginalised group that today is more often associated with criminality than well-intentioned idealism. Those who squat risk a criminal record. That makes the barrier to standing up for your right to housing a lot bigger. I dare say that the right to property is currently socially elevated above the principle of ownership. Because that is essentially what I think 'the squatters' want: a place they can care about in community; a home.

The rise of housing cooperatives

Squatting a building and starting a housing group is simply no longer a legal grey area, hence we might consider the concept of housing cooperatives as 'new' even though it resembles the same core principles that apply to housing groups that emerged in the 80's. Since 2015, housing cooperatives have been mentioned in the Dutch Housing Act (Article 18A). Formally this marks the beginning of the official concept, hence why people speak of certain 'rise' in popularity (Bokhorst & Edelenborst 2015). Following the inclusion of housing cooperatives in the Dutch

Housing Act, the Ministry of the Interior and Kingdom Relations has commissioned research into the exact 'value' of housing cooperatives in other European countries. According to this research, "the added value of housing cooperatives on the Dutch housing market appears to lie mainly in the realisation of specific housing needs for target groups that cannot meet them on the housing market, due to scarcity in type and/or price, as well as being willing to take responsibility for and involvement in a housing cooperative" (Ecorys 2021, p. 6).

For that conclusion, I believe the ministry could have also simply looked in their own backyard. Examples such as the Umbrella Factory were already proof in the 1980s that in the Netherlands, a housing shortage can be solved together and relatively cheap, out of principles such as togetherness and solidarity rather than potential profit. It is the housing groups that opted for a model without shares that still exist and can now invest in the sustainability of their properties because residence no longer have to finance any mortgage. In my opinion, the 'value' of initiatives such as housing cooperatives also lies in the intention to take care of their property and the environment. A property can exist much longer when it is constantly maintained by an established community. People often talk about sustainable building by applying bio-based materials, renewable energy and nature-inclusive elements, but overlook the aftercare of a house. While with that aftercare, I think, we might give the current and next generation of house hunters a better chance.
When the residents and founders of the Umbrella Factories celebrated the 25th anniversary of the Umbrella Factories (a milestone even then), one of the founders mentioned in his speech what he thought kept Umbrella Factories together:

"Maybe it has something to do with cherish. I personally love that word, which has a meaning that leaves a lot of room for perception. When you celebrate 25 years of existence, you start cherishing it. If we as a person can cherish the Plu, the Plu has a right to exist, the time factor does not change that. Only when something is cherished, you have experienced something."

Frans Veldman

Meanwhile, The Umbrella Factories have almost past 42 years of existence and the property is still being cherished by a devoted and ever changing community (probably until eternity).

Call for action (research)

Fortunately, just because squatting is no longer allowed does not mean that campaigning for housing rights no longer exists. In 2021, the biggest housing protest since the squatter riots in the 1980s took place. Thousands of people gathered in Amsterdam to speak out against the commercialisation of housing in the Netherlands. Among them were house seekers, as well as householders worried about insecure rental contracts or housing opportunities for their children. Since then, the housing shortage is back on top of the political agenda and, among other things, the Affordable Rent Act was passed. The intention is that this law will ensure that tenants are better protected from usurious rents and can keep their current homes. However, the law does little for people who are still looking for housing. To this end, the government aims to add 1 million houses over the next 15 years, (Telegraph 17 October 2023). For realising that task, the official organisation behind the housing protest, has formulated five concrete demands:

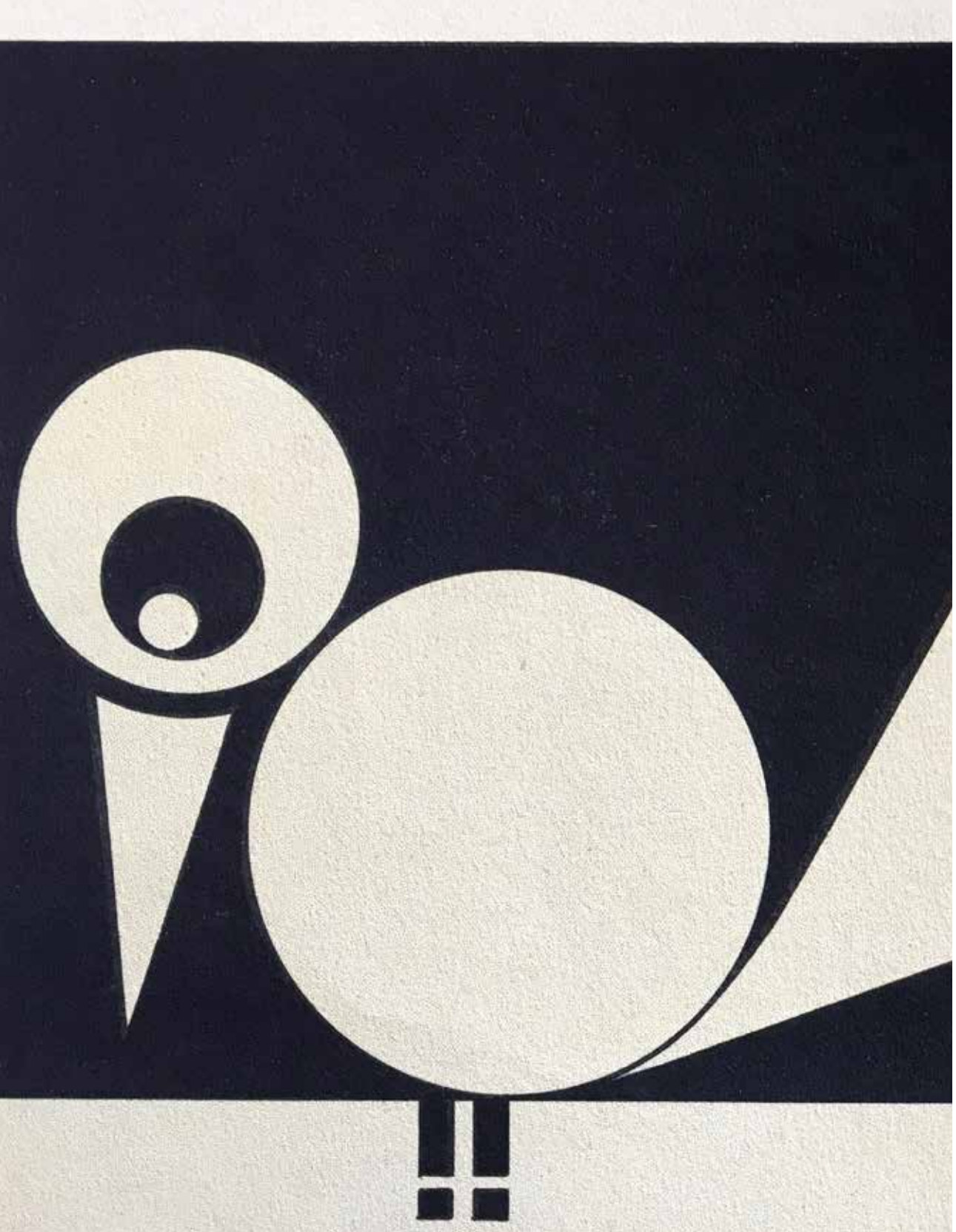
1. Build only affordable and social
2. Expropriate all private big landowners and slum landlords
3. Abolish the ban on squatting
4. Stop all annual rent increases
5. Regulate all rent

From my own perspective, I would like to add one more demand: do it together as much as you can. As a society, including scientific communities, we already have a lot of collective knowledge on how to build sustainable and affordable houses, but barely how to maintain a home. A lot of great technological advancements are currently being developed at universities and research institutes that can increase our building capacity without damaging our environment, but often without consul-

tation of future residents. By living in the Umbrella Factories, I got to experience what is means to ‘cherish’ a home with a community. Practically, it means there are more people with different skill sets that are relatively easy to mobilize (without having to pay them). Chores can be shared and are therefore less overwhelming and even fun! More intrinsically, it means overcoming barriers is celebrated together continuously, strengthening moral and motivation to sustain a community/household.

I like to thank the people that cherish the Umbrella Factories: I cherish you forever (photo of the author).

My call to action (or action research), would be that everyone that is currently trying to ‘solve’ the housing in the Netherlands should start by asking themselves, will future resident cherish their home? Expert hint: if you’re not sure, include them.



Wim de Haas

Any ideals left?

Towards an ontology of action research

Introduction

Over the past years I participated in several action research projects. In one of them, we, a team of young researchers, collaborated with a group of young farmers to develop an alternative approach to land development plans for their region and a critique of land development policy (De Haas 1981). It was a project that provoked thinking. The young farmers were critical of agricultural policy. So were we, action researchers, but was it the same critique? And what were we actually doing there: what did we as researchers have to offer the young farmers? Our policy analyses and ideas for plan alternatives did appeal to the young farmers, because they were better prepared in all kinds of official consultations, but was that what we as action researchers were aiming for? And, what happened essentially in that collaboration between young farmers and young researchers?

This and comparable experiences prompted further reflection on the phenomenon of action research. What is it in essence, and what is the social role it can play in this era?

The last century can be characterised as the century of the rise and fall of the ‘marriage’ between science and policy. This idea has its roots in the interwar period. Inspired by socialism, the idea of science-based policy emerged. It implied the opportunity to realise social ideals, based on scientific evidence and rational decisions. At that time, statements were published that are hardly imaginable today. For instance, in the

Netherlands, planning by the government was described as a 'movement which will have a positive effect on social life in all its manifestations' (de Cassares 1926).

During the last decades of the twentieth century, the implicit assumptions of this contract between science and policy were increasingly criticized. One by one, axioms and assumptions eroded under various forms of criticism. These included fundamental doubts concerning modernistic concepts such as: the capability to act comprehensively (Lindblom 1979); the rationality of government planning in power-driven environments (Flyvbjerg 1998); the technocratic neutrality of government agencies (e.g. Albrechts, 1999); unambiguous representations of developments (Pickels, 1995); the distinction between the 'social' and the 'physical' (e.g. Latour, 2005); the ideal of consensus-formation in the social reality of actual people full of emotion and agony (e.g. Hillier, 2003); and the belief in the socially engineered society in general (Boomkens, Seijdel et al. 2008).

This has resulted in a deconstruction of the notion that scientific research can be a constructive influence on public policy. There is even a reverse movement going on. It is not policy that is becoming scientised, but rather the science that is becoming politicised. Against this background, the search is on for a new narrative on the position of science. A position in which science is not only about increasing knowledge or increasing insight, but at the same time about social change and eliminating injustice. This position is not completely novel, but it is a road less travelled by. In that context, this article takes a closer look at this new research narrative: what can it contribute to these liminal times, in which existing structures and practices no longer function and we have to break new ground, without the certainty of whether we are on the right track.[12] This new research narrative is reflected in a number of alternative approaches, which are referred to by various names, including: action research, participatory research, shared knowledge creation, practice based research.

12 De term liminaliteit werd voor het eerst gebruikt door de Franse antropoloog Van Gennep in 1909. Het heeft betrekking op de overgangstijd waarin maatschappelijke transformaties plaatsvinden. Zie Kramer, J. (2024). Tricky tijden. Amsterdam, Boom.

The approaches can be differentiated from each other along three distinct axes. The first axis relates to the roles played by researchers and stakeholders. At one extreme, the roles of researchers and stakeholders coincide, they investigate and act together; at the other extreme, they take different roles, the one investigates, the other acts.

The second axis is about the nature of science. At one extreme it is normal science that is used. For example, scientific methods are used to measure the level of contamination around a power plant. At the other extreme is what is called post-normal science (Funtowicz 1993). This is a kind of science that involves not only verification or falsification, but also but also expresses itself in terms of probabilities. It includes design and imagination. Designing and imagining are incorporated into the methodology. The criterion of truth is expanded to include authenticity and integrity. The third axis concerns the breadth of objectives. At one end of the spectrum is research aimed at correcting a concrete wrongdoing, solving a concrete problem, or developing a technical innovation. At the other end of the spectrum is research that aims for systemic change, although even then it often seeks concrete levering points for transformation.

In the space spanned by these three axes, this article focuses on a form of action research that assumes the following working definition. Action research is a form of research that aims to effect change, in collaboration with individuals or groups who are striving to address a specific problem or injustice. This approach involves conducting research and acting in a mutually reinforcing manner, with the goal of contributing to a social transformation. In summary, this working definition comprises three elements: empowerment, collaborative knowledge development, and social change. Similar definitions can be found in: (Hult 1980) or (Kemmis 2011).

This reflection on action research starts with nothing less than an ontology, or in other words: what is this phenomenon of action research in essence. That includes questions such as: what constitutes the identity of action research, what are the most essential characteristics of that

phenomenon, what properties does it have and how do they relate to each other? This will be based on an ontological framework described in section 2. In sections 3 and 4 this framework will be used to characterize action research. Then, in section 5, the relevance of action research for our time is discussed. Finally, section 6 offers some concluding remarks.

Ontological foundations

The ontological framework used here is based on the observation that humans, but also non-humans are constantly interacting by some form of communication. With this observation we find ourselves in the company of several authors. This is reflected in the work of among others Niklas Luhmann (1927-1998), who argues that the interactive construction of social meaning is the unit of operation of social systems (Luhmann and Morgner 2022). Luhmann himself once said that he was 'not interested in people', but in communications. His theory focuses on all systems, human and non-human, and tends towards an evolutionary perspective on complexity. Another one that comes to mind is Jean Francois Lyotard. From a very different background to Luhmann, inspired by Wittgenstein and Heidegger, Lyotard describes human being as a flow of phrases (Lyotard 1988). He employs a broad understanding of phrases, i.e., phrases are not only discursive sentences but all meaningful expressions. Phrases are not limited to civilized conversation or substantive argumentation. Exercising power also occurs in phrases: people are accused, people are persuaded, false promises are given, misrepresentations are given, etc. Even being silent, deliberately or powerlessly, is interpreted by Lyotard as a phrase.

The idea of communications or phrases as basic elements of human being, often referred to as linguistic turn (Rorty 1992, Fischer and Forester 1993), goes against our basic intuition that there is a me and a world. Nevertheless, those who identify as 'event philosophers' emphasise that subjects and objects are constituted through interactions. People do not play the game of language but, instead, participate in language. This approach overcomes the forced distinctions between subject and object in research, policy and other fields, and prevents a narrowing of focus which is inherent to many government orientated approaches.

Different playfields of communications
Next, we follow the observation of Lyotard that, within the universe of all phrases, clusters of interconnected sentences can be identified which differ from each other on the basis of their goals (Lyotard and Van den Abbeele 2009). These goals may include, for example, observing a state of the art, expressing feelings, giving assignments, etc. Lyotard labels such clusters of phrases with a specific aim as 'genre de discours'.13 He refers to Wittgenstein's concept of 'language game'. Genres contribute to recognizing and judging phrases. Phrases which do not contribute to the aim of the genre are not recognized as valid or relevant.

Furthermore, genres can be understood in the context of the sociologist Latour's concept of modes of existence: different domains of interactions that each have their own rules for reality and truth and also refer to a specific value system.

Metaphors and names
The third step in this ontology deals with transitions between genres. Every communication or sentence falls into a genre, but in everyday life it is normal to switch between genres. For example, in the context of policy-making, statements about the actual functioning of a system may evolve into sentences about a new policy design, or normative sentences about policy choices, and so on. The way this transition occurs is characterised by the emergence of key concepts and phrases that have significance across both genres.
Lyotard identifies these genre transitions as a reflective judgment ac-

13 The concept of genre does not originate from Lyotard. Plato and Aristotle employed genre to characterize a type or style of one of the arts for centuries. Over the last century the meaning of genre began to evolve. For this article, the perspective of Bakhtin, who defines genre as an aspect of communication rather than an aspect of language, is interesting (Bakhtin, M. M., M. Holquist and C. Emerson (1986). Speech genres and other late essays. Austin, University of Texas Press)

cording to the definition of Immanuel Kant in his Critique of Judgment (Kritik der Urteilskraft) from 1790 (Kant and Walker 2008). Kant defines reflective judgment as a judgment without prior rules; in contrast to determinate judgment in which prior rules for the subsumption of particular cases under a universal concept are evident.14 A reflective judgment must be developed in the process of judgment itself. A reflective judgment has a subjective nature but always appeals to general validity. In this respect, the reflective judgment resembles judgments regarding taste or beauty which are also subjective with an appeal to general validity. As stated by Hannah Arendt (in: (Young-Bruehl 1982), 'The reason why I believe strongly in the Kritik of the Urteilskraft is not because I am interested in aesthetics but because I believe that the way in which we say, 'this is good, this is bad' differs not much from the way in which we say 'this is beautiful, this is awkward'; this means we are now prepared to meet the phenomena directly without some postulated system – including its own system.'

In the transitions between genres the metaphor appears. A metaphor can create a passage by referring to relevant meanings in the two involved genres. Many authors have emphasized the role of the metaphor in social processes for the increase of knowledge and the assignment of meaning (Ricoeur 1977, Lakoff and Johnson 1980). It is here that we should also situate the so-called boundary concepts (Westerink 2016). The classical view of a metaphor focuses on the word or sign that constitutes the metaphor. However, according to Ricoeur (1977), the function of metaphor is not necessarily understood from a word but, instead, from the sentence in which a word metaphor occurs. A metaphor is recognized by the word but is understood by the sentence, indicated by Ricoeur as a 'metaphorical statement'. Lakoff and Johnson (1980) characterize a metaphor as a cross-domain mapping in the conceptual system.

14 The reflective judgment is in its effects comparable to Aristotle's concept phronesis, i.e. practical wisdom, but has a different theoretical foundation which is not rooted in linguistic nature of societal processes.The ideal of reflectivity has a precise meaning in a genre approach. Reflectivity refers to the opportunity to judge without prior rules in the connection between genres.

Also, names are functional in the transition between the genres. For example, the name Kritische Depositie Waarde (Dutch word for critical deposition value: the amount of deposition that an intact ecosystem can tolerate), which in the genre research represents a factual situation and in the genre of policy making becomes a symbol of vulnerability and value. 'Proper names are indeed, if not all passages, then at least points of contact between heterogeneous genres', states Lyotard (1989).

Justice

The final stage of the framework defines justice. From a genre perspective, injustice can be understood as the suppression of genres. With each new phrase, different genres attempt to take control of the phrase. Lyotard postulates that injustice is intrinsically related to limitation of the opportunity for genres to take this role. For example, in a totalitarian situation, the narrative of 'our people, country, group or company' excludes other genres. As a result, phrases which do not fit into the genre are suppressed, especially fundamental phrases such as 'who are we' or 'who do we want to be'.

Genres in action research

How can we apply the genre framework to action research? First, we should note that action research also has the character of linguistic interaction. What is manifest are conversations, phone calls, e-mail, meetings, notes, and reports of citizens, planners, technicians, researchers and politicians. Therefore, empirically comprehended, action research consists of interactions in the form of linguistic utterances instigating other interactions in the form of language. Actions can be of various kinds. These can range from participating in formal participatory processes, legally challenging decisions, taking physical action, to developing alternatives. Only at the far end of a chain of 'speech acts', as coined by (Searle 1969), they then are converted into physical actions, such as a motorway blockade. Usually these have a symbolic meaning there that goes beyond mere physical effect. Until then, what happens is nothing more or less than the occurrence of a flow of phrases.

In this sea of speech acts we recognise three genres of interaction, each with its own rules of recognition and acceptance. In summary, these comprise action, research and decision making.

Taking action
Action research, as it is used here, stands for all forms of (linguistic) interaction aimed at articulating dissatisfaction with a problem or injustice, identifying entry points for doing something about it, and preparing interventions to solve the problem or combat the injustice. Sometimes this involves influencing public opinion, sometimes using the legal system, sometimes participating directly in policymaking.

Taking action starts with the discomfort of people being unhappy about something. Identifying points of leverage is part of taking action. The choice of means of intervention is also an important part of this genre and often leads to a divide between different groups of activists.

Taking action can be seen as an autonomous genre because it has its own goal, which finds its foundation in the concept of legitimacy. Rather than being based on the formal principles of law, legitimacy is founded on principles of justice that have general validity and therefore should also apply to the body being opposed. These principles are those that decision-makers should, by their very nature, comply with, yet they do not.

Researching
The next genre is research. Research in action research can be perceived as a genre in itself (De Haas 1998, De Haas 2005). Unlike scientific research, action research is, above all, aimed at producing a significant signal which will empower action. This may involve the extent of the problem which lead to action, the causes of this problem, and measures to solve the problem; all three often as alternatives to what has been studied in official decision-making. The objective of action research is not merely to accumulate knowledge or gain deeper insights; it is also to effect social change by presenting convincing knowledge or novel insights. Convincing knowledge requires not only respect for all that is

the case (Wittgenstein 1922) but also integrity and honesty. Research in action without the claim that it provides probably the best description, the sharpest interpretation or the most appropriate projection will not be accepted decision making and therefore not creating power.

Decision making
The last genre involved in action research is decision making. While decision-making is not a component of action research, it is impossible to conceptualise action research without considering the genre it seeks to influence. In this context, the term 'decision-making' is not confined to final and formal decisions but encompasses all formal and informal decisions in processes of policy and decision making. Decision-making includes decisions in (elected) councils, chambers or parliaments but also decisions in interactions with and between non-governmental actors like businesses and other institutions. Decisions create new realities and, thereby, necessary starting points for subsequent processes. Decision making can be seen as autonomous genre, aimed at creating power. Power is meant here as a general term, it can be power for the benefit of specific interests, but also power to achieve more justice, for example. In the genre decision making, power becomes manifest through language. Phrases under the regime of this genre always refer to the power base of involved parties. Power is exercised through the use of speech acts that refer to it, even in cases of physical exertion of power.

The transition between genres in the context of action research

The third step of the framework concerns the transitions between the genres action, research in action and decision making. Due to the reflexive nature of this phenomenon, it is only possible to provide examples of some of the forms in which this transition occurs.

Action research frequently must deal with circumstances where decision-making is based on easy assumptions, careless research or intimidating numerical work. Then the revelation is the mode in which the

transition to the genre decisions is accomplished. The revelation turns the bare fact into an argument. In this context, it is interesting that the philosopher Martin Heidegger pointed out that the original meaning of the Old Greek word for truth, Aletheia (αλήθεια), means unhidden (Heidegger 1961).

Action research may also result in the generation of alternative insights and the introduction of disruptive concepts. An example from the past is the insight that there are different styles of farming (bedrijfsstijlen), where decision making was based on a leader-follower model. The concept assumed that in farming practice there are different strategies for how farms seek new challenges. All these strategies are valuable in their own right. This concept was not only a scientific innovation but also an innovation in policy, which had hitherto thought mainly in terms of modern leaders and followers.

The demonstration of diverse styles also contributed to the empowerment of the farmers involved, which is a fundamental aspect of the transition process.

Furthermore, the transition between research and action can also be *process oriented*. For example, researchers may act as confidentes, researchers may provide their network or funding streams, or researchers may raise the status of the action simply by lending their name to it. All these modes contribute to the empowerment of all those involved and the enhancement of their collective capacity to act.

In essence, the transitions between the genres of research, action and decision-making may be typified by the ancient Greek term *parrèsia*, which means 'to speak the truth boldly' (Foucault 1983). *Parrèsia* is the combination of truth, courage and criticism, spoken out freely out of a sense of duty to the truth. Action research is *parrèsia* par excellence.

The meaning of action research as a methodology of transformation

The importance of action research goes beyond helping people who do not have access to knowledge, however important that may be. Action research also has added value for policy. It can – but is not guaranteed to – help build support for policy. It can also play a role in correcting technical errors or gaps in policy. And it can help make the government's antenna more sensitive to developments in society.

Functional meaning
But the importance goes further. As mentioned in the introduction, this is a liminal period. It is an interim, transitional phase in the context of a major societal transformation. There is often talk of the need for new narratives or a dot on the horizon, but in liminal times, by definition, this is not possible, nor do we want it imposed. Instead, liminal times call for experimentation. The British Special Forces seem to give the advice that if you are lost in the jungle: make a cup of tea, (Kramer 2024). Action research can be seen as making a cup of tea: concrete, but in tune with the zeitgeist.

Ethical meaning
However, the meaning of action research is still articulated in functional terms. But action research can also be seen in terms of social justice. It is a form that prevents a particular social genre from being left out of the dance between genres. And starting from the idea that ignoring genres is inherently unjust – i.e. not caused, but is: the intrinsic relationship between injustice and the suppression of genres – action research is thus a form that enables justice. It makes transitions between genres possible. Previously, this was described in functional terms, namely as increasing the sensitivity of the government's antennae to social developments, but from the perspective of the genre theory described, this is also a matter of ethics.

Resonance with the zeitgeist
In addition to a functional and ethical meaning, action research also has

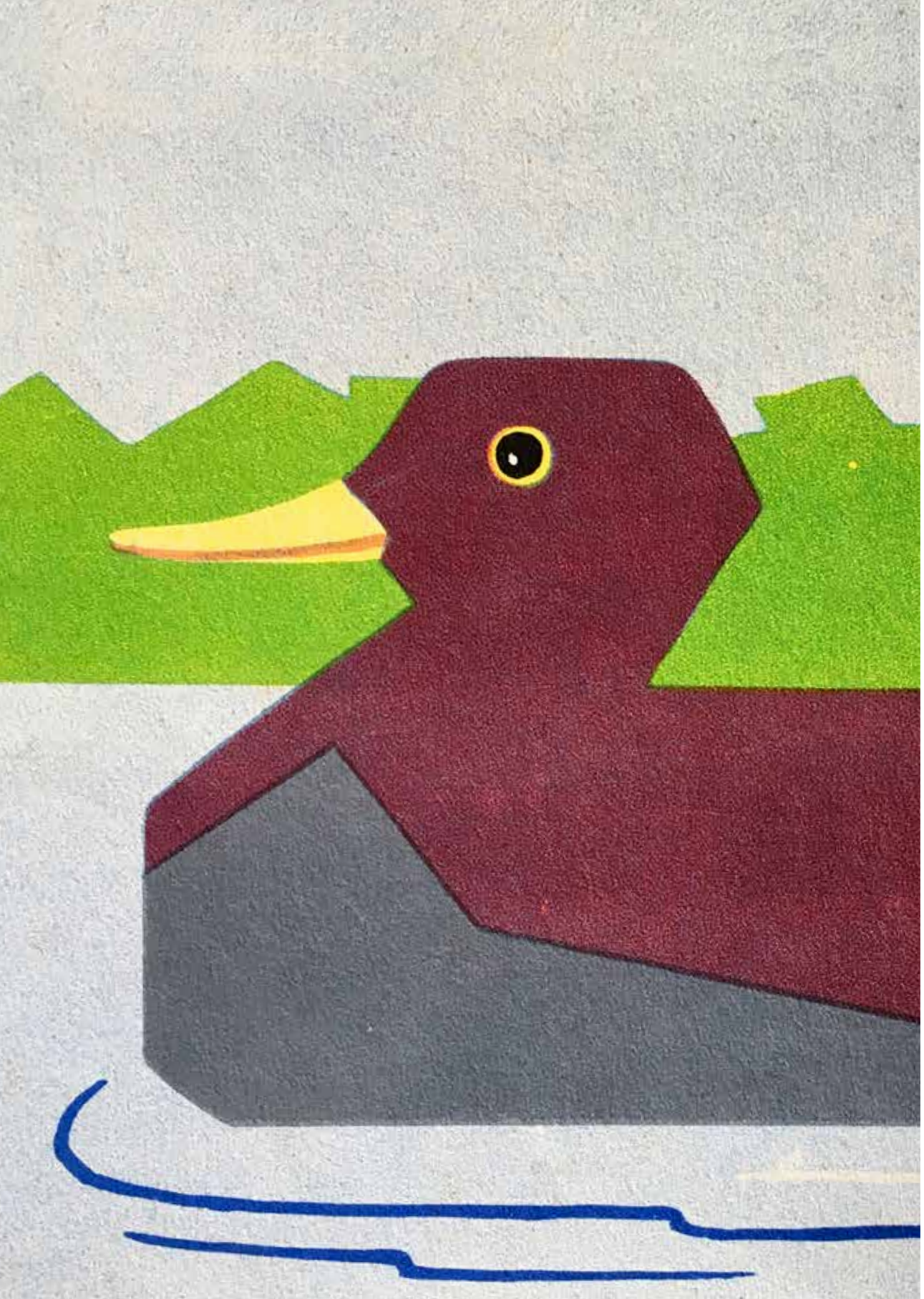
a cultural meaning. I have described how transitions between genres occur on the basis of a particular feeling. In action research this is the feeling of being in tune with the zeitgeist. It is precisely in the specific combination of the genres of action-research-decision that this comes into play. Through research, action becomes more than action. Action makes decision more than decision. Through decision, applied research becomes more than applied research. When action research works, it is on the basis that something important is happening in limitless times, that one is contributing to the zeitgeist. This does not necessarily happen in action research. Not if there is a pure power struggle and the action genre has to fight for a seat at the table. But it does happen when actions are successful and are included in decision-making, partly based on a positive contribution from the research genre.

Conclusion

This article reflects on action research in terms of genre. The objective is to delineate an ontology in which action research is inherently linked to transformative competencies, social justice, and resonance.

In this context, action research is interpreted as the flow of phrases under the regime of three substantially different 'genres de discours', i.e. taking action, researching, decision making. As a descriptive theory, this 'genre approach' describes action research as a social form in which connections between these genres are created. As a normative theory, the 'genre approach' describes action research as a social practice with a functional, ethical and cultural meaning. Successful action research resonates with the zeitgeist. This last meaning is especially important in liminal times in which experimenting and learning are more appropriate then fixed goals. These are the times for action research.

Successful action research resonates with the zeitgeist. This last meaning is especially important in liminal times in which experimenting and learning are more appropriate then fixed goals. These are the times for action research.



Jeroen Kruit

The Dutch Food Forest case

Without 'believers' no change
Without society actors that (critically) follow their intuition (gut feeling) this topic would not have grown this big.
Early adopters' enthusiasm feeds curiosity, at least in my case.
Following your curiosity as a scientist and as a society actor (person).
A promising perspective without hard underpinning data asks for a critical reflection.

In the Netherlands food forestry, which in essence is an extreme form of agroecology, has grown in ten years' time from a believer's bottom-up movement, run by enthusiastic newcomers in the agro production scene, to an established agricultural practice. Although it is small in its absolute scale, about 600 hectares as part of 1,8 million hectares conventional agricultural landscape, it is there to stay.

Story of hope

This article is about getting involved as a researcher in s society movement that embraces a totally new (agrarian) practice that follows a radical different approach to agriculture as we know it. A practice that appeals to people because it represents hope for a more resilient, healthy and inclusive future. Ample real-life practices to experience and minimal (scientific) proof for all the claimed promises did not scare society actors on all levels to strengthen the food forestry movement for the past ten odd years. Hundreds of small to large scale food forestry systems have been planted. They aim to produce food in a sustainable way, to enhance (soil) biodiversity, to stimulate humans-nature interaction, to educate people, etc.

Breaking with existing agricultural practices

The Netherlands is known for its economically efficient high tech and intensive (monoculture) agricultural production practice. The effect of a 60 plus year government focus on production maximalization rooted in the ambition never to face hunger again. It is a system with high inputs and high outputs. Some of the so-called externalities15 start to come back on us though. Nitrogen emissions affect biodiversity, CO2 and CH4 emissions are held responsible for climate change and infectious (viral) diseases in animal husbandry prove dangerous for humans too. Food forestry follows a fundamentally different approach. It is about farming with nature instead of against nature. It is a minimal input system based on several layers (7) of perennial species spatially organized to create microclimate niches and to harvest as much solar as possible. There is an absence of seasonal tillage or implementing herbi-, pesti- and fungicides and (artificial) fertilizers. The challenge lies in the design and its planting scheme in time. Knowledge of the soil, its history of (a)

15 Use of land elsewhere in the world to produce cattle fodder resulting in overproduction of manure, use of insect-, pesti-, herbicides, leading to biodiversity loss and human health issues and ground- and surface water contamination, use of artificial fertilizer, etc.

buse and the fluctuation in the groundwater table are important to make a good start. Yes, different 'schools' have different ideas about the management during the maturing of the forest. Nevertheless, crucial qualifications for all types of food foresters are patience and curiosity.

Transition to robust agricultural systems

Although society embraced the food forest phenomenon, a better (scientific) understanding of the value and potential of food forests as an alternative (productive) practice is relevant. Since we realize we need to transition towards agricultural productive systems that are robust enough to deal with climate change consequences like rising temperatures and extreme weather events.

Challenging (roles to take)

Doing it totally different might feel like admitting we went too far in our quest for the highest possible yields per hectare. Systems like food forests will not reach those high yields but might be very well able to generate a healthy business model. A model without the known negative impacts on the environment. A model that enriches the ecosystem it operates in and delivers a range of (paid) services society needs. It is difficult though to escape from our dominant (scientific) practice. At the same time making a change with the same approach that brought us where we are now is seriously debatable.

Movement

Inspired by the early adopters that listened to their gut feeling and started planting trees many other newcomers from all levels of society followed. Especially students discovered the potential of this new approach of agriculture in its early stages. They were and are driven by the promise for an approach that could deal with all the issues we face nowadays

in modern agriculture. Other pioneering individuals working in many different layers of society followed in their footsteps.

Food forestry as a movement started gaining speed when in 2017 a consortium of 25 regime and non-regime actors agreed on a Green Deal[16]. This consortium with the title – Greendeal Voedselbossen – focused on knowledge development and sharing, policy instrument development (law and regulation), communication and education. The network organization that derived from this proved to be crucial for the professionalizing of the food forest movement and its practice.

Explosion of activities

The consortium partners initiated research projects, lobby activities, meetups, educational activities, excursions, articles, popular scientific publications, debates, lectures, podcasts, etc. An important milestone was the introduction of the 1940 crop code. This presented agrarian[17] food forests a full agricultural status. Meanwhile Dutch agricultural forestry policy stated that the Netherlands should increase the quality and quantity of their forest reserve. One of the strategies to achieve that goal was to grow towards 25.000 hectares of agroforestry by 2030, of which a 1.000 hectares of production-oriented food forestry.

Professionalisation

Following the success of the food forestry consortium with its Green Deal the Dutch Ministry of Agriculture initiated a new network organization on the broader topic of agroforestry. The production focused food forest branch of the existing Green Deal network on food forest was integrated in this new Dutch Agroforestry network. The Green Deal network manifested itself parallel to this new network as ‘netwerk voedselbosbouw’.

16 Dutch Policy Instrument to support bottom-up innovation.
17 Food Forest lager than 5 hectares with a food production focus

What distinguishes the Netherlands from other countries is the fact that food forestry (and other forms of agroforestry) has gained – in a relatively short time frame – a position in society. It is – despite the many challenges – an accepted (agricultural) practice.

Hurdles to conquer

Despite the success and the (slow) adaption of alternative approaches like food forests there are hurdles to conquer before this is widely accepted as a valid model by the existing agrarian community (farmers, investors, politicians, civil servants, researchers, teachers, other food chain parties). Topics that need attention are investment capacity building, realistic and validated earning models and perspectives on possible adaptation pathways for traditional operating farmers. Because food forests are so fundamentally different from any known form of agriculture, adaptation is faced with serious socio-economic and cultural challenges. A recent student thesis report sketched out several challenges for the adaptation of agroforesty in the Netherlands.

Research and education

Within Wageningen University and Research food forestry and the broader topic of agroforestry is gaining interest. 10 years ago, a few students worked on the topic and nowadays it is subject of research in three different PPS projects that focus on food forestry, introducing trees in annual plant production- and in livestock systems. Many students do their internship, thesis and ACT on the related subjects and there are several PhD’s and an Engineering Doctorate active on the topic. PhD’s, teachers and researchers from Wageningen, Gent and Utrecht work as an academic food forest network on their first scientific publication. Through projects there is a lot of cooperation with applied research schools and their students throughout the country on the topic. There are several ambitious initiatives that work on integrating food forestry as an agrarian practice in green education on all educational levels.

Stepping up the barricades

Early adopters in this field can be found in in all colours and flavours. Some start a food forest from pure curiosity and operate in relative silence. For others practicing food forestry is like an instrument to show that this disruptive approach delivers. They want to show the world that there is an alternative for the agricultural practice as we know it. Success for these pioneers – often referred to as 'believers' – is strongly depended on their story telling capacities. In the Netherlands we are blessed with some skilful storytellers.

Delivering the message is partly determined by being able to empathize with others and having the flexibility to adapt your story accordingly. A bit of humour helps and some real-life anecdotes (pictures) that support the story are crucial.

Without these early adopters – and their eagerness to convince others that they are right – it would have been very difficult to grow the food forest movement. Because these 'believers' started planting 10-15 years ago there are food forests examples that can be visitied and experienced. Experiencing and eating from the forest produce proves to be a very valuable way of making people aware of the potential of these systems.

It was very exciting for a more social focussed researcher to be introduced in this world eight years ago. The enthusiasm of the pioneering group of practitioners, representatives of provinces, waterboards, ministries and colleges were very inspiring. This curiosity and innovation driven group of people was very aware of their underdog position. They knew that the story to tell needed to match the experience of the listener. To be heard in the traditional agricultural scene the story needed to be underpinned with facts. Research was needed to gather these facts. The established network proved valuable for finding the funding to take the first steps in introducing this new phenomenon in science. The challenge nowadays is to find funding to build upon these first scientific findings. Perennials take a lot more time to grow then annuals and soils develop slow. Despite this we already found spectacular results in soil water holding and drainage capacity and biodiversity development in the first years of development of a food forest.

Research (funding) practice is short term focussed. Understanding slow growing systems takes time. Research needs and funding practice do not match. There is a parallel with health research, explained by Jaap Seidel in the podcast series 'Broodje Jaap'. "Making long-term statements based on existing nutritional research is difficult because of methodological restraints. Epidemiological nutrition studies struggle with clarifying cause and effect and many short-term experiments in selected small groups of short duration cannot be translated to long term conclusions." Because research funding practice is not likely to change in the short-term scientific research on topics like food forestry needs to develop innovative strategies to proceed.

The power of traditional agriculture

Traditional agriculture cannot be seen apart from agrobusiness. Many not primary companies in the agrobusiness fear for their position when (policy) measures are taken to transform traditional agriculture to meet new environmental and climate impact sustainability standards. Their lobby is very strong and successful as recently demonstrated when the EU decided not to ban Glyphosate for another 10 years and the EU Green Deal was reduced to the absolute minimum.

It proves difficult to debate and compare different food production strategies when food forest data on production are scarce. Also comparing a food forest that has no or even positive externalities with systems in which negative externalities are not considered is unfair.

A low-tech system with only perennial species that embraces natural processes instead of fearing them is very alienating for farmers that are used to monoculture systems that focus on stimulating one annual species to produce to the max. It requires different knowledge and a differ-

ent attitude. There are tradition farmers that start gaining interest, but the number is limited. At the same time forms of agroecology like food forest could be an interesting strategy to continue farming practice with minimal impact near sensitive natural areas.

Concluding

Action research in which scientific researchers work closely with societal actors proofs a very useful strategy when practical and methodological restraints to execute research the classical way is difficult. Communicating on action research findings in a conservative science community is challenging. Having impact though with your research work can be achieved in many different forms. Building (international) networks of researchers, practitioners and other societal actors, focussing on exchange and collaboration is exiting. This network with participants in all shapes and sizes is a story telling entity that reaches out to all layers in society. Researchers play a relevant and valuable role in supporting the stories by asking critical questions, factfinding and putting things in a broader perspective. Researchers become story tellers themselves and that is a good thing I believe.

Researchers play a relevant and valuable role in supporting the stories by asking critical questions, factfinding and putting things in a broader perspective. Researchers become story tellers themselves and that is a good thing I believe.

Lèneke Pfeiffer

Laypeople, bubble life and biases in our participatory society

Roel During asked me to write a piece about action research for his farewell. Of course, I said yes, not yet knowing how much effort it would take to get my experiences and ideas about action research down on paper, which made me admire writers and how they guide us into their story in a compelling way even more. As a reader, I consume the letters, words and sentences without thinking about the writer, let alone what he or she had to do to create a compelling world of letters. I myself give meaning to what is written, am I disadvantaging the writer by doing so? With this writing I try to take you along in my daily work practice at the Wageningen Science Shop, that takes place where different roads intersect and less coincidental than it may seem, we are looking for answers to specific questions of civil society organisations by reflecting from different directions. Bubbles and biases come together.

Add in a separate block somewhere? For some readers, the Science Shop will be well-known Others will have no idea and may wonder what exactly you can buy in that store. Yes, a story could be written about the name as well but I won't do that now. (If you do want to know more check out the website: www.wur.nl/wetenschapswinkel or www.wur.eu/scienceshop.)

Truth does not exist, facts do, and the meaning of facts may vary, isn't it?

A need for facts and truth have directed residents of the Netherlands to Wageningen Science Shop for more than 35 years. These residents

hope that the Science Shop can help them to address the problems or challenges that they experience, and, more importantly, to solve or tackle them. Together with students, researchers and other knowledge- or experience experts, we jointly examine how different types and forms of knowledge can contribute to a solution or answer that is meaningful to the applicant. Together we establish that research can also mean that the results are different from what is previously thought or assumed. We go on a kind of study tour starting with an in-depth exploration of the problem in the local context. The destination or meaning of the outcome for the applicants is uncertain. Together we explore the different 'roads' or directions of gaze. We refer to this as *participatory action research* and that is what it is in the different projects to a greater or lesser extent.Central is that we help the applicants towards a solution. Weoffer an action perspective or an application, so as to stimulate change.

Action research, as defined by Peter Reason and Hilary Bradbury in 2001, is: "*a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory worldview which we believe is emerging at this historical moment. It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities*." In my view, you can also think of communities as bubbles in this case.

Action research or activist-research is used side by side in the literature. In both cases it is about an emancipatory way of working. It is not just about knowledge development in academia but mainly its value is the change it brings about in society. However, when the word activist is dropped it becomes exciting....., because we struggle to give meaning to that word. Right now in the current time frame, when we think of activism, we quickly think of the people of Extinction Rebellion sticking to the A12 highway. Why they do so does not interest many people.

In society this blocking action means for one person having to make a detour to get to the destination. For another person, it may mean that

the friend with whom a nice lunch date was planned can now start at four o'clock due to a delay. For the soccer team on the A12 road to the opponent it meant losing the game because they were late. For the policeman, what does it actually mean for the police? I can hardly imagine. The meaning of the roadblocks for people is very diverse, that is clear. The thing is hat the road is blocked by people who are concerned about the health of every living being on this planet. The group of people is called environmental activists because of the activities they engage in, while you can also speak of a group activity to protect the earth or a to stop the use of fossil fuels. Anyhow, politics has in recent years failed to protect our health and environment. At the moment, also an other strong power of a different kind of activism, with a concern for the financial position of companies and 'the Netherlands B.V.', through invisible lobbying activities towards politics is taking place. This hidden activism is aiming for continuing the usual by making use of the increased complexity of the whole system on which we have developed growing insights but seem to understand less. The government in The Hague has a directing role to play based on facts and their meaning for different perspectives. In science, different perspectives and thus meanings enjoy a growing attention and responsibility (Aisha M. So, Michelle G. J. L. Habets, Christa Testerink, Phil Macnaghten 2024). In the Science Shop, which could be seen as a boundary crossing vehicle (Boundary crossing as modus operandi at Wageningen University | NWO), this means the aims to democratize science. Issues that citizens' initiatives or civil society organizations find important to investigate are brought to our attention. Applicants do not perceive these issues as merely the responsibility of the government, large corporations or curious researchers. No, by now, many residents in this country feel a shared responsibility for a safe, social and healthy living environment. This sense of responsibility, I believe, is fuelled by the participatory society initiated in 2013.

More than 10 years later, we can either regret this participation society in the Netherlands (like many other policy choices), because it undermines our democracy, or we can see this as a more direct form of 'do democracy' with each other as a step forward in which we actively shape living together.

Regardless, science plays an important role in our democracy today and while trust in science is under pressure, we see the number of inquiries at the Science Shop increasing. The questions are very diverse and come from organizations and initiatives that want to change something in their (living) environment. The way the research is shaped is never the same and depends on the researchers involved, what role the applicant likes to play and the context of the question. Either way, participatory research is involved and often in combination with action research or sometimes activist research. One does not exclude the other at the Science Shop, as we are demand-driven. Requesting organizations report back that they are very happy with the opportunity offered by the Science Shop and researchers indicate that the questions asked by civil society organizations are innovative and sometimes require different research methods. The questions invite researchers to look at their field of knowledge in a different way. The application-oriented nature of Science Shop projects gives meaning to both sides: that of the applicant and researcher. Unexpected questions that change researchers' view of their owndiscipline is valuable to the field of research and, more indirectly, to society.

Some examples of projects: The Healthy Water Foundation (in Dutch: Stichting Gezond Water) is very concerned about the water quality of Dutch surface water, and asked a question about the role of fishing lead in it. The researcher was initially sceptical about the polluting role of fishing leadAfter investigation it turned out that there is indeed cause for concern. The Dutch fishing organisation Sportvisserij, which was also involved in the project as one of the stakeholders, received suggestions for the use of alternatives to lead. Hopefully, the fishing organisation will implement the use of such alternatives soon and will not wait until 2030 when legislation bans lead in sport fishing.

The Hangar Foundation (in Dutch: Stichting de Hangar), manages several acres of land around a second world war German-built aircraft hangar in Arnhem. The foundation, residents and designers want to grow crops that can be used for designer products. Students made some beautiful designs for the layout of the grounds, based on interviews and field visits. Researchers from Wageningen Food and Biobased Research

(WFBR) shared their knowledge regarding crops that are suitable for growing at this specific location and how to prepare the crops for possible use in design.

Roel During has been involved in quite a few Science Shop projects, such as 'Mussert's Wall', 'Nature Inclusive Project Development in Ede', and 'Rijp Voor Verandering'. The later was a project on village identity and belonging in De Rijp municipality and other projects. These projects are anything but "apple pie projects": various bubbles come together in such projects. However, the more friction there was, the more Roel seemed to be in his element. He can listen like no other with his great sense of social relationships, he is very well equipped to ask the right questions, and he is able to work together towards a solution direction. He is actively working with the knowledge that is available within WUR, which means he involves colleagues from other science groups as well as people fromoutside of WUR. at TU Delft or with Van Hall Larenstein students and supervisors and in society and can be meaningfully deployed for the group that has asked for it. Excellent action research and sometimes there was activism, you could also say 'informed activism'. Active residents who stand up for their cause and sometimes demonstratively propagate it on the basis of joint action research and shared knowledge.

With the Science Shop projects, as I wrote earlier, we aim to contribute to the democratization of science and the empowerment of groups in society. Empowering as a word I don't always find appropriate, because it involves groups that are already quite empowered. Empowerment could imply that the Science Shop is claiming a position of power. However, in my view, the Science Shop projects could also empower science. So, I would say it is a reciprocal form of empowerment.

Our collaborative process begins with finding common ground in a way that fosters respect and learning across different beliefs, values and goals (Chambers JM, Nel JL, Hille Ris Lambers R. 2020) and that confronts each other with the fact that people's own beliefs, values and habits tend to influence their perceptions of how much they are shared

(Gilovich, T. (1990). It is about unraveling the bubbles, or when you describe this in a more cheerful way, about 'bubble bathing'. It can be very enriching to sit around the table or take a walk with people who are not likely to engage in your so-called bubble because you are not open to it or the paths simply do not cross. And, of course, everything that happens in the Science Shop also has a political side.The change that comes with collaboration touches on more than the specific issue that we are working on with the applicants.

Very recently, to delve further into our target group, I attended a KNAW meeting ('Wie wil er meedoen?' - KNAW) on citizen engagement in our participatory society. Fascinating speakers from different disciplinary fields confirmed the existence of a bubble life. and less innovative than I had hoped immediately exposes the double life of researchers and professionals who are also citizens at the same time. A duality that I myself have not yet figured out – how do I act as a resident/citizen, and to what extent does that differ from my role in my working life? What is it like with others, how do colleagues deal with it? The active residents in the room let themselves be heard, especially they show how they fight for involvement in decision making. Fortunately, there are also some tips for them to be more skilled in this in the future. Be on time and make good agreements at the beginning of the participatory process about what happens with outcomes.

According to Eva Roovers, citizen councils are the solution to the problem of citizen participation: "in ten years' time, citizen councils will be as normal as elections". By means of drawing lots, residents can influence policy through the so-called deep democracy method and sociocratic conversations. Yes, eventually a decision needs to be made in this deliberation process as well, because not everyone will be right. The people who participate in the process to reach a decision will agree with the decision that has been carefully crafted. They have gone through a process together and at the same time created a new bubble. How does that decision influence the people who did not get in but are affected by the decision? How do they experience the decision? What meaning does the decision have for them?

A little disillusioned I returned home.

To conclude this letter with hope, I would like to say that the initiators of our Science Shop projects, the active people and groups in our society, are working with great enthusiasm and commitment towards a socially just, green and healthy country. I am happy to be able to connect that enthusiasm with the valuable knowledge we have within our beautiful organization. The result of the cooperation that follows does not end up in a drawer or cupboard. No, it gets meaning in society and every WUR researcher who wants to can contribute to that. Together we can make a difference, will you join us?

Thank you Roel for your great contribution to the Science Shop!

"We don't see things as they are; we see them as we are"

Anaïs Nin

Marcel Pleijte

Experiences with action research

Introduction

Roel asked me to share with you my experiences with Action Research. Experiences with Action Research I have mainly gained through and in collaboration with Roel, especially for Science Shop projects. First of all: what is action research? It is practical research that combines action and research. Gathering knowledge while simultaneously working in practice. It is often called uncomfortable science, because researchers have to come out of traditional roles and needed many additional capabilities in order to conduct good action research. This involves, for example, co-creation of knowledge: citizens contribute knowledge themselves alongside scientific researchers or develop new knowledge together with scientific researchers. Citizens or citizens' initiatives mobilize scientists and scientific knowledge for the interests of citizens. Science shop projects are used by citizens to improve or strengthen their position of power. This means there is a direct relationship between knowledge, power and action (Beunen et al., 2015).

Why do I think Roel likes action research so much? I speak in the present tense rather than the past tense, because I don't believe in the slightest that Roel will stop doing action research after his time at WUR. He likes it far too much! Then the question why? To answer that question, we have to go back to the characteristics of action research. You have to plan actions in advance. Roel loves that because then he can use his creativity in a kind of design task. So what is the ideal process architecture to achieve your goal? And if you think that Roel has singular

strategies for action research, then you are in for a rude awakening. He safely advised a citizens' initiative to set up another foundation, so that there are two legal entities that can work from different goals. Ultimately, though, to achieve the same end goal. Think of it as a strategy for keeping goals and underlying organisations pure, because one action from one organization can get in the way of another action, but not from a newly created organisation. In the end, you have to execute your actions yourself. This is something Roel can really enjoy. Weeks or days in advance he looks forward to the moment with the pitch that is going to happen. He thinks through everything that could happen and how he could respond. After all, good preparation is half the battle. What Roel also loves is observing what happens during the actions. Interactions between people are unpredictable. If, during projects, things threatened to go in a direction during projects that put us in a bit of a tight spot, Roel often managed to get all the attention in the other direction with an annoying, profound question. I thought that was masterful. He mastered that game down to perfection. Finally, action research required you to reflect. Roel always enjoys reflecting: What do the insights, opinions, behavior and views you gain mean? Is this the right direction and how to get there? In short, action research is really up to a smart man like Roel. By the way, there are two other reasons of a different nature why Roel likes to get involved in Action Research.

Initially, Action Research does not deviate much from normal research. But while in normal research this is often one linear movement, cyclical working occurs many times in action research. So, you have to be an agile and quick thinker. Here is one of the reasons why Roel is attracted to action research.

Another reason is context-relatedness. Roel has always had a passion for locations and the residents and their stories about the locations. For him, cultural history was more than just material heritage: the stories and intangible heritage in particular that made locations and their people special. Place based identities: Roel loves it.

My involvement in Action Research with Roel actually started with the project about the Noordwaard (Pleijte et al., 2005). Through another WUR research project, I ended up sitting at the table with a farmer's wife in Werkendam. She told me how she felt manipulated and mangled by the authorities and how much difficulty she had with government actions. The fact that she had a daughter who had had the same disease as my now deceased wife immediately created a close bond. We had a good connection. I returned to Roel with my story. Roel heard me and said: we should turn that into a Science Shop project. I had no experience with that at the time. Roel put me in touch with Gerard Straver and a science shop project was born. We had serious doubts about all the assumptions in the national policy for flood discharge. Various scenarios were calculated, and it was pretended that the dikes in Germany were so high that everything would collapse into the Netherlands via a high-water slide. The fact that the dikes between Köln and Lobith would flood at 17,000 cubic meters was conveniently ignored. The term 'wappies' did not yet exist then, but otherwise we would probably have been made up for it. It was striking how farmers were treated. I still remember the conversation with a farmer who had first left the Zuidplaspolder because of spatial planning interventions and settled in the Noordwaard. He had invested a lot and now it was his turn again after a few years because policy insights prompted him to leave again. The helplessness was palpable among the farmers and the power of the parties who did believe in the story of the high-water discharge. We were not opponents of Room for the River, but we did believe that the assumptions underlying the applied models used and the process should be transparent. And there we saw what power could lead to. Games were played in a sophisticated way. Governments playing all kinds of balls to each other. I can still see Roel laughing when I told the then deputy that the support between governments and other private parties had been bought with mirrors and beads. She turned about as red as her hair. Roel said very delicately to me afterwards: "There is a book: how do I become a rat? But you don't have to read that book anymore, you already are." I didn't know whether to take that as a compliment, but I thought it was for the best. I think Roel can admire that about me: I am often very honest, and I have my heart on my sleeve. Although this

sometimes made me a loose cannon for him and others. I remember that I once had to approach the director about the Noordwaard project. Roel could only laugh scornfully and say: that may not have been a very smart action, Marcel, to put it that way, but I agree with you about the content. What had happened? Two civil servants at the ministry of Agriculture, Nature and Food quality felt attacked by our research for the science shop in which we questioned the policy theory behind the high water. The civil servants complained that they had already invested so much money and time and that it was not ethical that we were now attacking our own Ministry of Agriculture, Nature, and Food Quality. I was a bit irritated, nonchalant, and wanted to go home quickly. I therefore replied briefly but clearly that I had nothing to do with that. I knew that the two officials immediately moved up the ranks to the Director General of the Ministry. On Monday morning I was allowed to report and explain my story. '*Plausible story*', was the director's response. Continue what you are doing but know that you are working in a politically sensitive environment, was his advice. Roel understand better than anyone that embedding the Noordwaard project became a must. We sought out a CDA Member of Parliament who was coming with critical questions in the Second Chamber. Ministries and some political parties were not amused about that and soon this Member of Parliament disappeared from the political scene. We have heard that also in our democracy strange things were happening. It was powerplay. In the First Chamber there were also critical questions about the national policy for floods. The ministry for realising the plans for floods had given a briefing to the Members of the First Chamber that they had to stop with their critical questions and that they had to trust on the policy for floods. Of course they give arguments for it. And it had worked: there was political pressure on political parties and package deals were made to keep the rest around policy for floods.

Ultimately, we were heard as researchers in a confidential House of Representatives committee meeting. We also had a professor from Delft on our side. That is also Roel: always forging coalitions to be strong together and to organise countervailing power. We always enjoyed discussing strategies to achieve what we wanted.

Former Minister Cora van Nieuwenhuizen (of Infrastructure and Water Management in the Rutte III cabinet) will receive a basket from the Waalwijs Foundation with regional products that can no longer be produced if the secondary channel were built. (Photo: Betty Leenders)

That action research also has limits regarding impact we have experienced ourselves. At one point, one of the farmers became so precarious that his wife was afraid he would commit suicide. The social pressure among farmers, partly played out by authorities, became so great that being right or being right no longer mattered. For us, this was clearly the signal not to proceed with the research.

A few years later, Roel came up with another science shop project on flood discharge: Varik Heesselt. How this project was coming up to him is still a little bit vague for me. Roel told be the story that we had written an article for the Journal Landscape. We had done an interview with professor Ies Zonneveld (Hazeleger, 2006). The redactors wanted to publish this interview in their journal. We had also written a critical article about Room for the River (Pleijte & During, 2006). The redactors had problems with our contents. We had played the game hard: the interview and the article will be publishes together and otherwise both

will not be published. The redactors didn't like our attitude, but it was working. Roel claims that Varik Heesselt's project is due to this article. I have my doubts about this. Roel had also a connection with someone on the administrative center of WUR. Further on an old colleague of us was involved in the citizen initiative of Waalzinnig in the area of Varik Heesselt. That he was in earlier times the boss of our director was a funny incidental.

Roel saw in Varik Heesselt as a new project a unique opportunity to continue our work around the Noordwaard and to investigate it even better. And yet another Science Shop project was born. At first I thought for a moment whether Roel was going to attack the watermills like a Don Quixote, but it was mainly the models around Flood Discharge that he was going to attack. Roel immediately sought out the Staff Office for which a former colleague also worked. By the way, she played a very good role. She also dared to look critically at the work of colleagues and did not avoid discussions with us.

Sometimes it also became exciting. At least. That's how I experienced it. Roel maybe less so. I admired him for that, by the way. Although the literal red spots on his neck and face sometimes gave away that it did something to him. At moments like those, something principled and combative always emerged in Roel. He didn't really show emotion then; like a real understated researcher, he often put forward his views anyway.

This also applies to the research on Varik Heesselt. It was that time again. We got to make the walk to the director again, but this time together. What had happened? The directors of the KNMI and Deltares had called our director that we were making bold statements about the models while we were not even hydrologists. We were asked by the director to provide text and explanation. Roel had a deja vu about my previous experiences and immediately thought: I am going to arrange the embedding properly right away. I am bringing my team leader with me and also Gerard Straver as commissioner of the Science Shop. The director had asked a professor of hydrology to attend. It was agreed that this professor would comment on our work before it went public.

And so it happened. We received a report from that professor with as many as 234 comments and remarks. Roel leafed through it. He said: I'm going to take 1/5 seriously...and the rest: toedeledoki...(most of you who used to watch Debtors Creditors know what this meant...). He did not do this out of disrespect, but also because he quickly saw where the criticism could be tackled at the foundation, and he immediately realized that this also tackled all other critical notes. Report was published (During et al., 2016a & During et al 2016b).

We also recently worked together again on a science shop project for the Intorno Foundation at the municipality of Rotterdam for the Schiehaven-Schiemond project. Once again, Roel managed to pleasantly surprise me. The Urban Development Department (DSO) would like to build as many houses as possible. They have their eye on Schiehaven Noord. The business case is leading for them: build as many houses as possible on a small piece of land to earn as much money as possible. Participation is mainly used as a check-off tool and not to achieve co-creation. After a successful first workshop with residents in the neighborhood and at the suggestion of the district manager who works for the municipality of Rotterdam, DSO eventually indicated that they wanted to have an exploratory conversation with us to see if we could mean something to each other in the process with residents. The meeting took place 3 months later. The conversation was full of exploring. It was not fainthearted. DSO indicated that there were frameworks and that the minimum number of homes of 500 and building were a given. Roel refused to accept that and started working on a small shift in power. If the participation process shows that fewer homes with a different business case are acceptable, then that should be accepted. Roel felt that a broader scope could be used. By already approaching everything from a fixed business case and assuming that all assignments from politics are a given, he said, "too much had already been set in concrete or stone." Yes, Roel is always fond of the funny puns too. Roel indicated that local politics is too remote and that they should be much more involved in the interaction processes with citizens and that it will turn out that frameworks or principles can be adjusted if there are good reasons to do so. So, involve municipal council members and do not just conduct

the discussion with DSO officials, because they feel legitimised to act only based on political orders. Make Schiehaven-Noord a pilot to create a new governance experiment: the triangle of citizens, policymakers and local politicians who interact much more together. The answer and reaction are easy to guess: they preferred to refrain from it anyway and also see no opportunities to cooperate with us. What was annoying, according to the DSO person involved, was that our research process would go through their participation process with residents. “Yes, very annoying,” I replied. “But unfortunately, that is no different. It is a matter of cooperating with us or not and if you do not cooperate, we run our own process. The results of our research are always public.” The official in question has already been removed from the file. In November, a new consultant was hired by the municipality of Rotterdam. The request again whether we wanted to cooperate. And after an hour of talking, talking, talking she says to me: “I expected you to work with us.” I said: “yes, but not on the color of your eyes. What do you bring with you? What are the conditions for collaboration? You didn’t put anything down on paper.” She would come back to it...didn’t happen after six months. The municipality’s participation process has also not yet started... at the end of March, the alderman said during a council meeting that it would start in April or May. That’s not possible at all, I thought, then the invitations should have already been sent out. And now it would be the end of June, I was told at the end of April... I don’t believe a word of that either: that’s about the start of the summer holidays. Anyway: in the meantime, we are doing our own thing and still hope to influence the municipal council. Unfortunately, Roel will no longer experience it all during working hours, but perhaps he would like to enjoy a supreme moment again at the final presentation of our work.

Experienced benefits

What benefits have we experienced during the practice of action research? Action research really leads to better and deeper insights than research that is only conducted behind a desk. It’s like storytelling. Sometimes you say: you should have been there! You mean that you could really have experienced it yourself. Feeling the emotions and energy, hearing the arguments back and forth, the so much telling non-verbal behaviour. As an action researcher you experience all of this. You immediately get the feeling that your research will not disappear in a desk but will have an impact. It matters, it’s about something that really touches people. The nice thing about action research is that you come into contact with a lot of people and learn a lot about what they do and how they look at things. In this way, you get a lot of insight into how practice is experienced.

Action research can also be very unpredictable, but that is precisely what makes it challenging. It can increase engagement with the organizations you work with and for the issue you are working on. Action research is often more practice and solution oriented. As a result, it often delivers more valuable recommendations than a practical study that is not action research.

Many studies start from a theory, and then a practical study is drawn up and conducted on that basis. It is a ‘linear’ form of research, and often more deductive in nature (you work from ‘top’ to ‘bottom’). With (extensive) action research you work more cyclically.

Experienced disadvantages

There are also some disadvantages that we have experienced in the practice of action research. Although these disadvantages are well overcome.

Action research is participatory, which means that as a researcher you participatie. How far it is allowed to go? Is it justifiable for you, as a researcher, to put forward citizens’ views in legal proceedings? Are action researchers allowed to put questions to politicians? Where is the dividing line between taking action and doing research? Can that dividing line really be drawn that clearly, or are we talking about a vague area where the boundaries overlap? When is your integrity at stake and when is it not? First, it is about doing the steps you do during action research con-

sciously and thoughtfully. This means thinking through the above questions and discussing them, for example with a supervisory committee. In addition, as a researcher you can sometimes think of the best course of action, but as a researcher you cannot do it. That's what we had with Varik Heesselt. We knew that the minister was being closely monitored by the House of Representatives and that she had suffered some damage to support in several other projects in the country. When the citizens' initiative Waalzinnig told us that the minister was coming for a visit, advice for us was quick to give: make banners, collect all the tractors available and invite as much press as possible to make a fuss. (See: www.waterforum.net/aanleg-nevengeul-inwoners-varik-heesselt-adviseren-minister-ludiek-protest).

Here we clearly did not choose to enter the barricades ourselves. The ethical question is: could it have been done? We believe that it could have been done, but it would not have added anything in this situation. If the process had been the object of research during the protest, we would have had less of a problem with entering the protest ourselves.

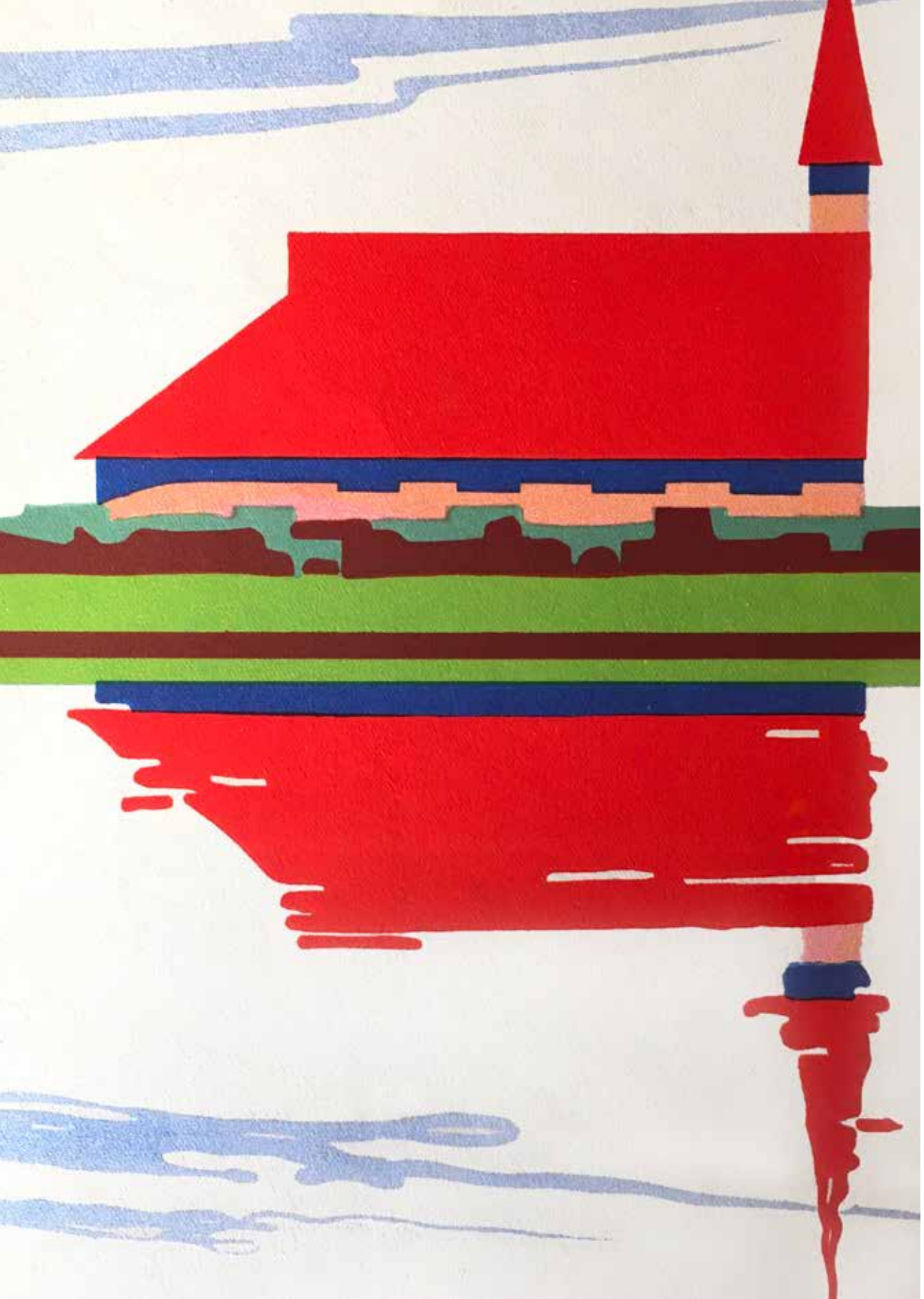
A further disadvantage of action research would be that it is not repeatable. That is partly true and therefore also partly false. With the Varik-Heesselt study as a following-up to the Noordwaard this proved to be true in practice. On the one hand, we had already gained enough knowledge to ask the right questions about the models used, but on the other hand, new interpretations had been added. What is going on is that other researchers can no longer take the place of the action researchers, which affects reliability and validity. However, interview questions both before and after, for instance, can be submitted to other researchers or a supervisory committee for comments. Properly describing the research methods and all steps taken also helps to increase reliability.

Furthermore, it can be a disadvantage that action research can be quite complex. You need a good dose of reflection power, guts, an open mind, and creativity. Let these aforementioned requirements for action research be precisely what are characteristic for Roel. If I told Roel that complexity is a disadvantage, he would look at me as if he could see

water burning. He would say that this is precisely what is great about action research and that he does not recognize the disadvantage at all, but rather denies it. In his view, I think it is a disadvantage for inveterate desk-researchers who can only reflect while reading. In action research you have a lot to do yourself to design how to deal with complexity. Roel thinks that is about the most fun there is, but it demands quite a bit more from a researcher compared to the desk researcher mentioned earlier. Furthermore, as a researcher you need to create your own countervailing powers. So don't set up a supervisory committee that only contains yes-men, but where you know that they have different perspectives and that will keep you on your toes. For example, focus on criteria such as validity, reliability, and integrity, all to ensure the quality of the action research is as high as possible. Of course, you should not go too far in organizing your own criticism, because then you will dig your own grave. Roel understood this like no other. He made sure that he always had enough supporters around him who came from various other organizations to avoid too much 'WUR sprout smell'.

These were my reflections on my experiences with Roel and with action research in practice. I'm going to miss Roel tremendously. Not only for his expertise, smartness, speed, but above all as an extremely pleasant, patient colleague with great empathy with whom it was especially exciting and very enjoyable to do action research!

Roel, we are going to miss you terribly. Like trees that are connected to other trees via an invisible network of fungi, we were connected to everything around us with a special role for you. So don't disappear totally, stay connected and do not disrupt the network too much! But above all: fill it out in such a way that it makes you happy!



Nina de Roo

How to be an action researcher in the age of polarisation?

A changing research context: Polarization and a sense of urgency

The past decade was like a swelling storm gaining strength. An increase sense of urgency about a number of related challenges is giving rise to mass demonstrations of citizens sharing their frustrations about government's inability to halt the negative effects of climate change, loss of biodiversity, pesticides, and other matters. In the same vain, a number of court cases have occurred whereby citizens sue governments and companies because they feel that the right to live in a safe and healthy environment is at stake. Citizens are concerned, and feel ignored by their governments. At the same time, farmers' protests show that many farmers feel they are unrightfully being stigmatized as 'the bad guys'. They feel cornered. And ignored, too. This dualism, also called polarisation, is exacerbated by the media. Fighting for attention, mainstream media prioritizes the loudest and more extreme voices.

Also within WUR (and other universities and knowledge institutes) scientists have been stirring up matters more and more, often in the name of science. Scholar activism, science activism, and activist science is more openly being practiced, as also observed by Resource Online[18].

18 Resource Online (2023), visited on April 29, 2024 via: www.resource-online.nl/index.php/2022/12/15/activist-scientists-acceptable/?lang=en

WUR even has an activist academy[19], teaching students how to combine research with activism for the 'good cause'. This activism can take various forms, from participation in protests, to being active on (social) media, to the research itself being activist in nature. Nevertheless, the vast majority of researchers feels uncomfortable when it comes to activist science. This is mostly because the majority of researchers see a conflict between 'picking a side' (as one often does in activism) and the cognitive values they were taught during their education, such as independence, objectivity, or neutrality.

In this essay I explore another set of reasons to be cautious with activist science. Because, let's face it: increasingly, research topics are increasingly surrounded by ambiguity and high levels of uncertainty. Let's take the science-policy interface when COVID-19 hit our society in 2019. As several analyses have shown later on, the Dutch Government heavily relied on the Outbreak Management Team (OMT) to dictate policies that determined what we should and could no longer do. The OMT consisted of medical scientists (predominantly virologists, representatives of general practitioners, and epidemiologists). Especially in the winter of 2020-2021, the OMT promoted policy measures that strongly prioritized infectious disease control, at the expense of wider social and economic effects of such measures, on nursing homes, but also on education, the cultural sector and small and medium-sized enterprises[20]. Moreover, the uncertainty surrounding the effects of measures was downplayed, especially by the government, who in turn claimed to fully rely on the expertise of scientists. The technocratic decision making has seriously damaged trust in science among many citizens. They felt that values that matter to them (such as general well-being, caring for elderly, encouraging social contact among children) were ignored.

19 Activist Academy (2023), visited on April 29, 2024 via: www.wur.nl/en/research-results/chair-groups/social-sciences/sdc/education/activist-academy.htm

20 Aarts, Janne, Gerth, Eva, Ludwig, David, Maat, Harro & Phil Macnaghten (2022), The Dutch see Red: (in)formal science advisory bodies during the COVID-19 pandemic, in: Humanities and Social Sciences Communications volume 9, Article number: 464 (2022), open access article, available via: www.nature.com/articles/s41599-022-01478-w

Also closer to the domains of WUR's research, ambiguity and uncertainty prevail. Think of the debate around pesticides and glyphosate, the nitrogen crisis, or the use of gene-editing in plant breeding for instance. An attentive researcher may furthermore observe strong similarities between the science-policy dynamics during COVID-19 and those related to planetary boundaries. In the case of planetary boundaries I refer to the technocratic manner in which some strands of research approach this topic. Claims that planetary boundaries are 'non-negotiable' limits, or 'immutable facts emerging from the bio-geophysics of planet earth' that are 'immune to political pressure', are highly contested (see for instance this blogpost from Roger Pielke[21]). This ambiguity raises important questions about who should have a say in what counts as a 'safe' operating space for humanity as a whole, and societies in different areas. Is it even possible or desirable to arrive at singular conclusions about these questions? Exposure to danger and risk perceptions may vary widely across communities for any specified boundary value and geographical or socio-cultural context[22]. In this context certain people claim to have the monopoly on the truth – in the name of science – and therefore the authority to decide for the people what is best. The combination of technocratic control with centralisation of power is not only dangerous for the credibility of science, it is also dangerous for society at large.

The mixture of disagreement or ambiguity over values and knowledge, and high levels of uncertainty, complicate the roles that researchers can or should take to contribute effectively to 'wise decisions' society has to make. What is wise, and who should decide this? It is in this context that I want to reflect on the role of action research and research activism.

21 Pielke, Robert (2013), Planetary Boundaries as power grab, Blogpost published on April 4, 2o13, available via: www.rogerpielkejr.blogspot.com/2013/04/planetary-boundries-as-power-grab.html

22 Pickering, J., & Persson, Å. (2020). Democratising planetary boundaries: experts, social values and deliberative risk evaluation in Earth system governance. Journal of Environmental Policy & Planning, 22(1), 59-71. doi.org/10.1080/1523908X.2019.1661233, available via: www.tandfonline.com/doi/full/10.1080/1523908X.2019.1661233

We don't need more science-based messiahs claiming they have the monopoly on truth

In some ways, science seems to have loose its nuance as seems to be infected by binary thinking. When we are faced with topics whereby the arena has fallen apart in two poles who scream for attention, Bart Brandsma has rightly pointed out it is hardly effective to contribute to the debate by doing more or the same[23]. The intentions of scientists who – despite the backlash of hate messages – keep on fighting falsehoods in (social) media by making corrections, or explaining how it really works, are admirable. The problem is that it is likely to have (unintended) adverse effects. Scientists who communicate unilaterally or promote single directions of action, unintentionally and unknowingly allow themselves to be taken for a ride as their messages are the fuel for the extreme poles to feed on: either by the opposite pole ('look what they are doing!'), or to feed the own bubble of likeminded people. There is a real risk here, namely that science is being portrayed as partisan. This may backfire to the image of science as a whole. Especially dangerous are scientists who claims to be neutral and objective, but are actually stealth advocates[24]. In this context the example of CRISPR/cas is a nice case in point. WUR scientists see themselves as neutral and objective researchers exploring the potential of this promising technique. However, the general public considers WUR to be an advocate of CRISPR/cas, and the media portrays WUR as such too. To be fair, in 2019, when WUR hosted a dialogue about CRISPR/cas, disproportionate attention was dedicated to promises of CRISPR/cas to save the world (coined as 'enlightening sessions'). Attention for the risks, particularly the more structural concerns such as the increasing influence of big agri firms on farmers' and consumers' decisions, were not given a stage.[25, 26]

23 Brandsma, Bart, Podcast over polarisatie, published on October 13, 2023, available via www.wur.nl/nl/en/nieuws/podcast-over-polarisatie-zo-begeef-je-je-in-het-speelveld.htm

24 Pielke, Robert (2007). The Honest Broker: Making Sense of Science in Policy and Politics. Cambridge University Press, UK. doi.org/10.1017/CBO9780511818110

Furthermore, it has been proven over and over again, that more knowledge, or better facts, does not necessarily result in behavioural change (of politicians, companies, citizens, etc). The transfer of knowledge model is not sufficient and inappropriate, especially when it comes to topics surrounded by value conflict. Knowledge is only a small part of the transformative puzzle: a healthy dose of modesty and humility about science's contribution to transformation would do us good.

In short, we don't need more science-based messiahs spreading their truth, be it activist scientists, stealth advocates or pure scientists. This may harm the institution and credibility of science in the long run. Neither does it help addressing the sustainability challenges we are faced with. For scientists who do feel the need to engage in activist science, two modest requests: 1) be explicit whether you speak from your professional expertise or from your personal point of view or values, and 2) be transparent about your positionality and potential biases, as well as the limitations of your own expertise. This helps others to value your contribution in its context.

The value of action research in contested spaces

To contribute to a better world as researcher, it's important that we pick our roles and subsequent research approaches carefully and appropriately. There are more options available than being a pure scientist or a science activist. Building further on the roles for scientists identified by Esther Turnhout and colleagues[27], I explore the potential role of the

25 de Roo, N., Metze, T. and Leeuwis, C. (2024). University-led dialogues with society: balancing informing and listening? *Journal of Science Communication* 23(01), N02. doi.org/10.22323/2.23010802, available via www.jcom.sissa.it/article/pubid/JCOM_2301_2024_N02

26 Macnaghten, Phil, Shah, Esha, & Ludwig, David (2021). Making Dialogue Work, Responsible Innovation and Gene Editing. In: D. Ludwig, B. Boogaard, P. Macnaghten, & C. Leeuwis (Eds.), *The Politics of Knowledge in Inclusive Development and Innovation* (1st ed., pp. 243-255). Routhledge Publishers. Available via: edepot.wur.nl/556237.

27 Turnhout, E., Stuiver, M., Klostermann, J., Harms, B., & Leeuwis, C. (2013). New roles of science in society: Different repertoires of knowledge brokering. *Science*

reflexive action researcher. Still, more important than the role is the attitude of a researcher. In the context of polarisation, good research, which has the potential to contribute to societal transformation, needs researchers with a proper dose of compassion, equivalency, and critical reflection.

Compassion

Think about this for a moment. You are super convinced that you are right about some things that dearly matters to you. You are confronted with someone who is equally convinced but has an opposing viewpoint. For a while you try to convince each other, bringing in the best arguments that you can think of. Both sides dig deeper into their trenches. Now what? You may think: either you both go your own way, or one of you has to give up. But there is a third option: you may acknowledge the fact that you completely disagree, and that you are both quite frustrated about it. According to David Bohm, a physicist who wrote a tiny but inspiring book about dialogue, both of you are immersed in a feeling of necessity: 'that wat cannot be put aside'. Some absolute things. In fact, you actually have something in common: your frustration and the feeling that you are not being understood. It may seem irrelevant, but this very detail may be an opening for the two of you to find a way out of your disagreement. You start to realise the other person is not his or her thoughts, but in fact a person, who wants to be listened to, and understood, just like you. We may raise the question: is it indeed absolutely necessary (to be right, to convince the other)? After some time pondering, you may feel that you are easing up. Only then can something new emerge. Creativity can emerge if we let go of this necessity[28] . Freedom makes possible a creative perception of new orders of necessity. Artists were among the first to discover this; and it still legitimates their importance in contributing to transformative change.

This small thought experiment is about compassion for the other and letting go of one's desire to convince. In action research, this is a key quality to cultivate. I started to see its relevance when I was working on

and Public Policy 40(3), 354-365. doi.org/10.1093/scipol/scs114

28 Bohm, D. (2004). On Dialogue. In L. Nichol (Ed.), On Dialogue. Routledge. doi.org/10.4324/9780203180372

an action-oriented research project aiming to improve food and nutrition security among smallholder communities in the Ethiopian highlands. As an interdisciplinary group of researchers, we had to come up with an integrated protocol to assess agricultural technologies for their contribution to food security. But we were all too convinced that our way of seeing was the most pertinent one. The agronomist pledged for a yield indicator, the economist for a cost-benefit analysis, the nutritionist for the nutritional value of the crop, and I advocated for the inclusion of indicators that (diverse) farmers themselves find relevant. We could not come to an agreement. Although we remained polite, the conversations were getting awkward as we lingered on without making much progress. Until, at some point, we realised that we either had to let go of the entire idea or change our approach. We realised for all this time, we were only trying to convince each other, instead of seeing each other as persons, and listening to each other. Only when I found the space to stop and listen, could I see the relevance of what they were seeing and started to become interested in their point of view. And vice-versa. We realised that no-one was right, we all had a piece of the puzzle.

A related but different dimension of compassion is when we are doing research in contexts where people are experiencing strong emotions. In such cases, compassion is key. Emotion, and the ability to face it in a respectful way, can be a great source of wisdom to come to meaningful action in research. The Science Shop project led by Roel During about the Wall of Mussert[29] nicely illustrates this point. In this project, WUR explored a sensitive issue: exploring potential new designs for a building that was used by nazis in WOII. The project was about the Wall of Mussert, used in WOII by the Nazi Mussert to speak to his troops. The research question in this project was how this contested building could be preserved, and what meanings can be formed in the process. The project was not a classical research project, but a science-society collaboration executed by students. After a preliminary exploration and discussions with key figures and stakeholders, students made several designs of how the building could generate contemporary meaning in this new

29 De Muur van Musstert, Februari 25, 2019, available via: www.wur.nl/nl/en/nieuws/de-muur-van-mussert-de-toekomst-van-donker-erfgoed.htm

age. The project gained significant attention and met with resistance, because some people felt uncomfortable about giving such fraught heritage a prominent place. However, the students and researchers handled these emotions respectfully – with compassion. This project is inspiring to learn from in the current age of polarisation, where much of our research is being drawn into public debates full of controversies and taboos.

Moreover, this example shows that acknowledging pain and emotions, does not necessarily imply that these emotions need an immediate answer or solution. The simple act of allowing emotions or pain to be present, is already a step away from further escalation. Although not an example from research, it was inspiring to see how Johan Remkes handled emotions of pain, frustration and fear, when he was asked to explore the options for re-opening stakeholder negotiations about the future of agriculture in the Netherlands. Rather than coming up with solutions, he was the first one to publicly and explicitly acknowledge the difficult situation that farmers are facing (see the report here[30]). And he was sincere. While farmers were initially hesitant, Remke's attitude and sincere acknowledgement, opened the way for negotiations (which, in the end failed anyway, but that is beside the point here). Turning back to research, compassion is key in action research. It requires researchers to be humane and allow other than cognitive elements enter their research every now and then.

Equivalency

A second ingredient for a good action researcher is the idea of equivalency: to truly see your colleagues, and especially your research partners (including citizens) as peers. Particularly in research contexts without clear consensus about what knowledge is relevant, and which pathways is the best bet to a sustainable future. In these situations, it is wise to recognize that we – as researchers – are also mostly in the dark. Only together with others can we find a way out.

30 Remkes, Johan (2022), Wat wel kan: een aanzet uit de impasse. Published on October 5, 2022, available via: open.overheid.nl/documenten/ronl-4039eee4ed-64ecd5574d2c34f1e1fe24fa8e8f18/pdf

In my field of research, agricultural research for development, for a long time, the dominant framing of farmers has been as research subject, recipient, or target group. Funding agencies explicitly ask for a description of the target group and recipients of the research. This way of phrasing implicitly orders researchers as knowledge holders, and societal actors as knowledge receivers or users. When researching complex or wicked problems, this artificial division of labour does not make sense because widespread confusion and disagreement about the nature of the problem often complicates what knowledge is relevant. In such cases, it is more appropriate to start on equal footing. In action research, it would be logical to start with joint problem identification, rather than a researcher who defines the problem on his or her own.

In the follow-up of the above-mentioned project, that is exactly what we did. Instead of fixing the research questions beforehand, we only described the co-creation process and the governance of how to come to meaningful research in the context of smallholder farming in Ethiopia. With transdisciplinary teams from Ethiopian universities, local governments, and farming communities, we went through an intensive co-creation process whereby diverse voices in farming communities identified bottlenecks related to food security and natural resource management. Through a participatory deliberative process, the partners jointly prioritized which topics to be explored further, followed by experiments of potential solutions to the identified problems. In some ways this project could be called a citizen's science project. Some farmers wanted to experiment with smaller dosing of different seed varieties to reduce the risk of one crop failure. Young mothers wanted to experiment with home-gardens and trying out different indigenous vegetables (but also other crops like fruit and spices). And youngsters wanted to start collective groups to jointly farm or provide natural resource management services to the community.

Critical reflection

The results of this project were impressive; it is possible to meet the diverse needs and perceptions of smallholder communities through this

type of action research. Looking back however, the role division was still quite conventional. While members of rural communities and different government agencies decided what to research and participated in data collection, researchers set the boundaries and defined the scope, interpreted, and analysed the data. This was as far as we could get in terms of action research in the funding context and political situation in Ethiopia. The thorough reflections during my PhD dissertation about the socio-political dimensions of agricultural research made me realise we were trying very hard to work within the existing system to make things better, but we were not doing the right things. The deeper one dives into the idea of action research, the more one is drawn into identifying (and the wish to change) underlying power structures: in funding schemes, in the relation between WUR and the Ethiopian universities, but also in the history of dynamics between the government and rural communities in Ethiopia. After submitting my PhD, it no longer felt right to contribute to sustaining this system, so I decided to quit the international development cooperation scene soon after.

In the Netherlands, action research often goes under the name of citizen's science, and it is booming. There is a wide variety of research projects around measuring or counting: counting butterflies and other insects, citizens measuring air quality, farmers measuring water quality (see an example here[31]) or nitrogen deposition, farmers and researchers measuring key performance indicators for nature-inclusive agriculture. Measuring is important; as expressed in a Dutch saying: 'measuring is knowing'. However, as in the Ethiopian project, here too it is important to reflect on what is being measured (what or who is excluded?), what indicators are used (and which ones ignored), and who decides what is relevant? Action research can certainly contribute to transformative change, if it is able to ask the right questions. in Systems Theory, three levels of questions or learning are distinguished:

1 *Are we doing things right?*
This question, and the innovations resulting from this type of research, often help to optimize the existing system. One can do great action research with livestock farmers to explore the efficiency of animal housing systems. What is taken for granted here is that animals are kept in barns, and research can contribute by experimenting with the most efficient barns possible to reduce emissions and improve productivity. The underlying capitalist en exploitative system is not being questioned in this type of research. Consequently, this type of (action) research is likely to sustain the existing system as it is.

2 *Are we doing the right things?*
Research asking this question contributes to identifying the underlying patterns that keep the system from changing. Research that identifies lock-ins, and path dependencies for instance. Currently, many action oriented research projects are being set up around area-based approaches in the rural areas of the Netherlands, where these type of questions are being explored in transdisciplinary teams of researchers and societal actors. Action research is definitely not the only relevant form of research in such contexts. But action research is particularly appropriate here because it positions researchers on equal footage with others, and because of the continuous learning cycle of trying something, reflecting on it, learning from it, and trying something new.

3 *Who decides what is right?*
The moment people start digging into the assumptions and patterns causing our behaviour to repeat itself, a process of critical reflection is ignited, pertaining to new, deeper layers of reflection. Especially exciting are action research trajectories allowing for reflection to take place in a safe space, and with people holding diverging world views and knowledge systems. Oftentimes, these reflexive moments enable a third level of questions to emerge: who decides what is good, sustainable, desirable? But also, who is excluded in these decisions, and why? These questions often lead to the exploration of implicit power dynamics, also in the practice of knowledge production and thus our own research practice. For research to be able to contribute to transformative change, this third level is the most relevant.

31 Boeren Meten Water, available via: boerenmetenwater.nl/meten-is-weten

Unfortunately, a research project is most likely not the appropriate setting to be asking such questions, as the very notion of 'doing a research project' is underpinned with assumptions about linearity and accountability hierarchies which make it ill-suited to transform anything within a project's time frame and mandate[32].

Especially when research topics are surrounded by ambiguity, the factor time and the notion of progressive insight complicates critical reflection about the three types of questions. So, while we go and do our research, we often find ourselves confronted with progressive insights in relation to our topic of research. This forces us to realise we often turned out to be wrong in the past. So what does that tell us about the likelihood that we know what is true or right today? A simple example to illustrate this point is related to electric cars. While electric cars have been promoted as transition pathway towards sustainable transport, progressive insights about the crazy amounts of lithium needed, and where and how to get it, puts the sustainability claims of electric cars in a different light. A third level question one could ask here is: do we need more renewable cars or might the world be better off when we change the way we look at transportation?

Sparks of inspiration for action research in times of polarisation

The last part of this essay is geared to two inspiring examples of transformative action research, both representing relevant trends for aspirant action researchers who have the ambition to contribute their time and effort to making the world a bit better through research.

The first example is a project called River Commons[33]. An alliance of scientific, policy, activists and grassroots organizations in Europe, Africa,

32 Jensen, A., Thuesen, C., & Geraldi, J. (2016). The Projectification of Everything: Projects as a Human Condition. *Project Management Journal* 47(3), 21-34. doi.org/10.1177/875697281604700303

33 River Commons, available via: www.wur.nl/en/project/river-commons.htm

Asia and Latin America works on equitable and participatory co-governance of river systems. The aim of this initiative is to learn from experiences in situ and translocally (successes, problems and creative solutions), and build new conceptual and methodological tools for research, education and stakeholder interaction around the governance of rivers. In particular, River Co-governance Labs are organised in the case study sites to investigate river governance by actively involving stakeholders and mobilising their ideas for change. What is inspirational about this project for instance, is that it does not simply see a river as water or a natural resource to exploit, but uses concepts like River-as-Ecosociety, River-as-Territory, River-as-Subject, and River-as-Movement, inspired by how rivers are conceptualized in different parts of the world. For instance, Dutch researchers in this project are learning from researchers and activists in other parts of the world about how the acknowledgement of rivers as legal entities contributes to sustainability. Eventually, the alliance hopes to support innovative river co-governance initiatives around the world, and thereby contributing to equitable policies and sustainable socio-ecological river systems.

Initiatives like this have the potential to contribute to transformation because they allow time and space for fundamental philosophical questions to be asked about rivers in different parts of the world. Furthermore, the alliance is set up as an equivalent and diverse partnership, allowing a plurality of knowledges and world views to engage in dialogue, without having pre-occupied ideas about the outcomes.

For the second spark of inspiration, I turn to the rising popularity of citizen assemblies, particularly in Europe. Citizen assemblies are particularly relevant for topics that are surrounded with ambiguity, both in terms of values and knowledge. Think of topics like the use of pesticides or chemicals (or glyphosate in particular), or more generic topics such as climate justice, the future of agriculture in the Netherlands, the role of AI in our society, or the relation between humans and nature. In all these topics, our society is divided, and science is too. This reduced the perceived legitimacy among governments to make rigorous decisions about the way forward. In some way citizen assemblies can be consid-

ered a form of citizen's science. A randomly selected group of citizens explores a given topic for a period. After carefully facilitated deliberations, citizens come to a number of conclusions and recommendations. Researchers may take different roles to add value in the process of citizen assemblies. For the sake of having an example, let's take the topic of glyphosate. As individual scientist you have three roles to pick from.

1 If your expertise is more generic, and if you can sincerely assess the value of different scientific perspectives, you may present yourself as knowledge broker. In this role you provide an overview of what is known, unknown territory, where there is consensus and what is contested in science. The limitation of this role is that you do not refer about the implications and what ought to be done, you leave that to citizens. For most individual scientists this role is difficult, that's why in most of the cases this role is trusted to interdisciplinary panels of scientists.
2 A second possible role is the issue advocate, who presents all knowledge about a particular policy option. In the example of glyphosate this would be either presenting all relevant knowledge in favour of the (safe) use of glyphosate, or all relevant knowledge against it. Issue advocates are allowed to make inferences about the implications of their knowledge for policy. Both types of issue advocates are legitimate and valuable, if they are transparent about their positionality, as well as the limitations of their expertise.
3 A third role could be an action researcher, who helps to organise, research, and reflect on the citizen assembly as means for wise decision making in polarised topics. If picking this role, it's of utmost importance that you stick to the process, and do not get involved in influencing the content. This can be hard for people who have strong feelings about the topic at hand.

Concluding remarks

In this essay I provided reasons to be cautious with idealising activist science as the way to go, especially when society is strongly divided around a topic. Caution is needed for scientists who – in the name of science – claim to know it all and ask you to pick their side.

Furthermore, action research comes with certain responsibilities. Being transparent for starters, and explicit about the limits of one's expertise and the values that inform one's work. Another key responsibility for action researchers is being reflective about the power dynamics that they are part of. Individual action researchers and their research institutes are all playing their part in this power play, whether we like it or not. We can change the rules of what is considered good research if needed, but we cannot ignore the rules while we play the game. Compassion, equivalence, and critical reflection may be helpful tools for an action researcher operating in polarised contexts.

To end with a positive note, inspiring initiatives are sprouting here and there, like the River Commons initiative or a project like The Wall of Mussert. Such initiatives deserve the space to be nurtured. Their potential lies especially in enabling a diverse set of people to ask the right questions. And to stay with the trouble. From there, if we are lucky, it may be possible to identify fruitful ways to address the underlying drivers that prevent the system from changing its course. Equitable collaborations between research and societal actors are key to make this happen for instance between science and art, or with other 'unusual suspects'. In this regard, I sincerely hope that action researchers will remain humble about what is truly possible in the realm of research when it comes to transformative change. After all, looking back at how societal change happened most of the times, there is hardly any example where research was at the source of it.

Irini Salverda

Remembering our roots

'The story behind the farm' as an inspiration for reversing nature amnesia?

My first personal experience with the impact of action research

In 2003, I was introduced to action research for the first time with the project 'The story behind the farm'. It was a project to remember, because it was so different from the other classically designed research projects. Because we had so much personal and good contact with the 20 farm owners in the Overbetuwe who participated in this storytelling project. Because we saw how enthusiastic and involved they became and went out of their way to find out the story of their historic farm and its former residents. They were very grateful because we helped them on their way with knowledge and support, and put them in touch with other farm owners at lively reading evenings. It had a great impact on their lives and their concrete choices for the preservation and development of their beloved farm and yard. Not only did they now own the material goods and the land, they also 'owned' the intangible heritage, the historical story, and its value and significance for their present and future life on their farm.

With this example, I want to show what action research can mean and what it means for society. What the social impact can be, because with research and knowledge you can contribute to a social goal together with stakeholders from the field. Such as the preservation of the endangered culturally and historically valuable agricultural landscape, in the case of 'The story behind the farm'.

Action research is a systematic approach used by practitioners to examine and solve real-world problems in their own context (Eelderink, 2020; Migchelbrink, 2022). Action research emphasizes collaboration between researchers and practitioners, with the goal of producing practical and actionable results. By participating in this process, individuals can actively contribute to the development of solutions that are relevant to their own experiences and environment. Ultimately, the goal of action research is to generate knowledge that can bring about positive change and influence future practices in a meaningful way (Eelderink, 2020; Migchelbrink, 2022).

Can we reverse nature amnesia by storytelling?

Now, more than 20 years later, I wonder, could such a storytelling project with residents, or citizens, also be used to help preserve biodiversity? When people learn historical information and stories about their green living environment, perhaps more awareness and involvement can be created for the rapidly disappearing biodiversity in their (immediate) living environment? In this way, can we contribute to reversing the major biodiversity loss that we are currently facing, partly due to increasing nature amnesia?

Nature amnesia refers to the increasing disconnection and lack of knowledge about the natural world that many individuals in modern society experience (Papworth et al, 2009; Royal Holloway, 2020). As urbanization and technological advancements continue to shape our lives, there is a growing concern that people are becoming disconnected from nature and its importance.

The theory of the lack of natural history awareness was introduced in 1995 by Daniel Pauly, the shifting baseline syndrome. New generations have ever-shifting frames of reference of what nature is, due to the rapidly disappearing flora and fauna as a result of urbanization, industrialization of agriculture, large-scale deforestation, overfishing, environmental pollution, etc.

For example, many people don't know any better than that farmland consists of perennial ryegrass and black-and-white cows that are allowed to graze occasionally. A lot of people already think that's great and think it's always been that way. Not knowing which many other species and also landscape elements used to be part of the agricultural landscape. If, for example, people were to discover through stories that farmland used to consist of herb-rich grassland, and that the many roadsides, shrubs and ditches used to be full of diverse flora and fauna, they might be shocked by the current absence. And they might know better and appreciate more what biodiversity can be restored and conserved.

I also count myself among the people who could learn a lot more about nature. I am also part of the increasing amnesia about nature. People like me could investigate what the landscape and nature in the immediate vicinity (or another place) used to look like and what biodiversity was present then. People like me could talk to local nature and landscape experts, as well as listen to stories and experiences from longtime residents and farmers in the area. We could dig up old maps and photos of the area and the people who lived there in the archives. We would hear anecdotes and personal experiences, and based on that we could write stories about what it was like there in the past, and how people used to live in their green living environment. In addition, we would describe how diverse the landscape and nature used to be, and we would tell about specific flora and fauna that used to live here and what it meant. But a little help and inspiration would be needed, from researchers, local experts and experts by experience such as former residents and farmers from the area. And also from fellow residents who, like me, would discover the wonderfully diverse story of nature and landscape in the area, and we would make that our own. As a result, we, as current residents and users, might realize which (endangered) flora and fauna could be given a place again, and we might want to restore and preserve this flora and fauna with much more care and commitment.

Purpose and method of the project ‘The story behind the farm’

In 2003, Alterra was commissioned by the Foundation for the Preservation of Farm and Yard in Gelderland to carry out the project ‘The story behind the farm’ in the Overbetuwe region (Salverda and Mulder, 2003). The Overbetuwe is an agricultural area located in the urban area of Arnhem and Nijmegen, where the changes in the landscape are rapid. Increasingly, farms are being given a non-agricultural function. The historic farms of the twenty participating farm owners have all had to deal with a change in function.

The project brought together twenty farm owners in a concerted effort to discover and share the stories of their historic farms. It aimed to explore for themselves the cultural heritage of the historic farms and their changing role in an era of rapid landscape change. The overarching goal was to increase historical and environmental awareness among the farm owners and to inspire them to integrate their heritage into the current landscape.

The experimental nature of the project was aimed at fostering cooperation and knowledge exchange between the farm owners. By creating a supportive environment and providing access to resources such as archives and expert guidance, Alterra facilitated the exploration of the historical narrative of each farm. Through two storytelling rounds, the participants not only shared their own stories, but also inspired and supported each other in their journeys of discovery. This collaborative process not only deepened the bond between the farm owners and their heritage, but also led to shared experiences and mutual support between the participating farm owners.

See the text box below for more information about the project’s purpose and methodology.

The aim of the project was:

- Initiating a process in which farm owners, in consultation and with the help of experts, trace and propagate the cultural-historical story behind their farm.
- Increasing the historical and environmental awareness of the farm owners, so that the contemporary design of the farm, the yard and the surroundings is more inspired by the past.
- Stimulating private initiative by not imposing what is valuable, but by giving space to the farm owners to discover it for themselves.

Alterra supported the farm owners in their search. Together with them, we delved into archives and provided tools such as a knowledge guide, a library and an interactive website. We also organized meetings, where the farm owners presented their stories with visual posters they made. For many participants, the threshold for doing research was initially high. Alterra’s support was therefore very welcome. The participants also spoke with old (local) residents, which was very inspiring. Some have also consulted experts, such as members of local historical societies.

The project consisted of two rounds of stories. For the first round, we selected ten participants. In the second round, other farm owners also participated, who were taken as guests on the story evening. The stories of the first round were an important source of inspiration for the guests, who later participated in the second round.

Twenty unique stories with lots of anecdotes, old photographic material and fragments of historical documents were the result of the searches. The stories are about the past, present and future of the farm. They are stories about changes over time. The stories have been collected on the project’s website and bundled in a booklet. We have also actively reached out to local and regional media, such as newspapers and radio and television stations, who have further shared the story project and the stories.

The lessons learned in terms of the method (the ‘sparks’ in the project) that can be used in other storytelling projects are:

- The participation of the farm owners in the storytelling project of-

fered a lot of guidance, direction and stimulus
- The personal encounters and interactions between the farm owners, such as the storytelling meetings and the conversations with old residents, were very inspiring and stimulating;
- The personal guidance of experts, such as help with archival research, was highly appreciated.
- The media attention has generated a lot of interest, enthusiasm and involvement from the broader community.

Lessons learned from the storytelling project

Connection and co-creation
One of the most powerful aspects of The 'story behind the farm' was its ability to connect. The project shows effects that all have to do with 'connection'. First of all, a bond was created between the participants in the project. They exchanged information and stories, inspired each other and sometimes even helped each other in their search. Secondly, the historical and environmental awareness of the owners of the farms has been increased. Their knowledge of and involvement with the past of their farm and its place in the landscape has grown. The third effect is that the past is a source of inspiration for future plans. Fourthly, we see that the stories have had a social function. The farm owners have spoken with former residents and people from the area. Many anecdotes, personal experiences and sometimes even emotions were shared with each other. The project has stimulated contact between the indigenous and immigrant populations. But the contact between young and old, and farmers and non-farmers has also been strengthened. In addition, the project's stories and ideas have reached a large audience through its website, television broadcast, and other publicity. As a result, the stories have contributed to the collective awareness of historic farms and their importance for the Dutch landscape. Finally, connections have been made between science and the knowledge and experiences of people from the region. By talking to old (local) residents and consulting experts (researchers and experts from historical societies), a connection has been created between 'formal' and 'informal' knowledge.

The project shows that stories have a great connecting power. Also very powerful is discovering, exploring and telling a story yourself. Doing your own research and collecting information, stories and anecdotes turned out to be a big trigger for the enthusiasm, involvement and proactivity of the participants. But although self-study is a good trigger, it is often not entirely feasible for many people, for example due to limited free time and capacity. The structure and support from the storytelling project, the guidance of researchers and local (experience) experts, and the meetings with other farm owners, have helped the participants enormously in their personal search. It was the right complement to what people had already discovered for themselves; The right push to get back to work and to take the next step. Such co-creation of the historical narrative and the connection between experiential knowledge and expert knowledge has proven to be crucial.

Small-scale, intensive and no control over the outcome
In addition, the project has also shown that motivating and guiding the participants in the storytelling project takes a lot of time and energy. It is an intensive process, which yields a lot but also requires a lot of attention and involvement. Both for the participants and for the researchers who supervise the process. As a result, the scope of the project is relatively small, only a relatively small group of people can participate. On the other hand, a snowball effect also creates a lot of influence and movement among the local community in the wider area. Furthermore, as researchers, in addition to tailor-made guidance, you also have to give a lot of space and freedom to the participants. The added value is that participants mainly discover the story themselves, develop it and tell it to each other. With some help and support from the researchers where necessary. As researchers, you have no control over the outcome of the stories, on what exactly is told and how. After all, it is the stories of the participants, not those of the researchers. And that may be difficult for researchers, who themselves have a lot of knowledge, and are themselves aware of its importance and significance?

Reconnecting by digging up personal stories ourselves

So, storytelling is very powerful. It is a way to teach people something by touching them on a personal and emotional level and connecting with them. And maybe even more powerful is discovering, exploring and sharing stories ourselves.

Storytelling has great cultural significance, as it has been a fundamental way for societies to pass on traditions, beliefs, and values from generation to generation (Green et al, 2004). By telling stories, communities preserve their history and heritage so that important cultural knowledge is not lost. It serves as a means of connecting individuals to their roots and creating a sense of shared identity and belonging. Additionally, storytelling often reflects the unique perspectives and experiences of different cultures, fostering understanding and empathy between different groups of people. In many cultures, storytellers are respected figures who play a crucial role in maintaining the cultural fabric of society. Overall, storytelling is a powerful tool for preserving, celebrating, and passing on cultural heritage (Green et al, 2004).

In the project 'The story behind the farm', twenty unique stories have been created by the farm owners themselves, rich in historical insights and supported by archive material and personal anecdotes. These stories not only captured the evolution of their farms over time, but also served as a catalyst for broader social connections and community engagement. Through interactions with other participating farm owners, former residents, experts, and the wider community, the farm owners have not only expanded their knowledge, but also created meaningful connections that transcended generational and cultural divides.

It can be concluded that exploring the history of their historic farms has led to a deeper connection to the past, creating a sense of cultural identity and pride. Conducting interviews with local historians and previous owners has provided valuable insights into the significance of their farm within the wider historical context. By delving into old documents and historical archives, owners have discovered stories that highlight their farm's role in shaping the local community and contribute to a better understanding of the area's cultural heritage. Additionally, sharing these stories with the wider community through storytelling nights, the storybook, and media coverage has fostered a sense of appreciation for the cultural significance of the farms and fostered a better understanding of the area's heritage.

So, at its core, 'The story behind the farm' is about building a local community and preserving the collective memory. Through storytelling sessions, archival research, and community engagement activities, the project has fostered a sense of belonging and shared identity among participants. By collectively documenting and sharing their farm stories, the participants have contributed to the preservation of cultural heritage, by passing these stories on to future generations.

Opportunities for biodiversity conservation

Hopefully, 'The story behind the farm' illustrates how reconnecting with our cultural heritage can serve as a countermovement to the rapid forgetting and disappearance of cultural-historical heritage. And hopefully it is now plausible how a storytelling project like this could also be applied to the preservation of our natural heritage, and thus help us to reverse nature memory loss.

In my opinion, the project 'The story behind the farm' offers valuable lessons to help overcome nature amnesia. By harnessing the power of discovering stories and telling each other about the natural heritage in one's own immediate living environment, such a storytelling project can help revitalize our connection with nature and a sense of stewardship of our green living environment. It is important that people are given the opportunity and space to write their own valuable story about nature. Stories that are inspired by the experiential knowledge of (older) residents in the area about the flora and fauna that used to be there, and where necessary supported by natural history knowledge through local

experts and researchers. Also very motivating is, sharing these stories with each other, for example at story evenings, and the joint conversation that can follow about the value and significance of the flora and fauna of the past, present and in the future. By weaving nature into the fabric of our cultural identity and collective memory, we can create a more sustainable relationship with biodiversity and build a more sustainable future for future generations.

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Gerard Straver

Action research and Wageningen Science Shop

Some History

The question of how science can contribute to societal developments is one that has long played out within Wageningen University & Research (WUR). After all, this question underlies the founding of WUR over one hundred years ago. The goal was to use science to promote processes of change in agriculture in The Netherlands and its colonies. Wageningen science contributed enormously to developments from which we now reap many of the benefits. But concerns about negative effects of these developments were also growing. To what social developments did they contribute? Who benefitted from these developments?

In the 1960s and 1970s, these questions were very topical. Inspired by the 1968 protests in Paris, students and staff at Dutch universities wondered to what extent science contributed to the reinforcement of unequal power relations and to problems such as environmental pollution and poverty. They wondered how science could contribute to reduce or solve those problems.

The question was also whether the university was sufficiently equipped to deal with problems in society. Wasn't the university too much of an introverted ivory tower, focused on scientific innovation and excellence? Were universities not too much supporting the interests of the established order? Who determined what was researched and how education was delivered?

Within the universities, critical working groups of students and staff emerged who wanted to put education and research at the service of people that had no or less access to the university. Those working groups experimented with new forms of education and research, in which students and researchers could work on subjects that had previously received little or no attention.

Emergence of Science Shops

In the 1970s, the first science shop was established in an Amsterdam shopping street, initially a simple cardboard box where people could deposit their questions. Subsequently, science shops arose within all Dutch universities with the aim of making science accessible to groups in society that did not have the money for it. They were given names such as Rechtswinkel, Bouwkundewinkel or Chemiewinkel. In Wageningen there was officially a science shop from 1985.

At science shops it was possible to conduct research on the initiative of civil society groups. Science shops tried to find answers to research questions raised by these groups. They looked for researchers and students within the university and elaborated a concrete research plan together with the requesting organization.

Science shops offered the opportunity to experiment with new questions, from different perspectives, with unusual expectations. Researchers and students from different disciplines were involved. Collaboration with civil society groups appeared very different from collaboration with the usual government organizations and companies. This called for new ways of doing research. Action research? Activist research? In any case, research with a purpose. And when this required unusual forms of collaboration, science shops looked for opportunities. Either way, the questions and possibilities of the civil society group were central. The intention was always to seek answers to the questions posed. To help the requesting organization move forward. To formulate tailored advice that matched the ambitions and possibilities of the societal group.

Science shops fulfilled a mediating role between university and civil society. They looked for researchers and students who helped finding answers to the questions posed. They contributed to the research design and the implementation of the research results. They mediated conflicting interests.

For scientists, it was a challenge to work in a science shop project. As a researcher, how should you deal with organizations with outspoken ideas and unspoken expectations? With action groups going against mainstream developments, seeking media attention, and sometimes creating conflicts? How to deal with controversial opinions?

But for societal groups it was also an exciting quest. For them, it was difficult to find the right door within the university to knock on. How can you as a societal group make use of the expertise present within a university? How do you collaborate with researchers and students? How do you keep them from just using you as an interesting case study in their research program or for their education? How do you get them to work on your problem in such a way that their work contributes to finding answers to your questions?

Universities wanted to increase their social service and outreach. They saw the benefits of a science shop and provided a limited budget. Because a lot of work was done with students, research costs were relatively low. And because of sparkling enthusiasm among many of those involved, an energy and dynamism emerged that had a positive impact on the collaboration and project results. It allowed the civil society partners to move forward. But there were also advantages for university staff and students Researchers used the experience to build their research program. Students earned credits and gained valuable experience for their future careers.

Due to budget cuts and other priorities, science shops disappeared at most Dutch universities in the first 10 years of this century. In Wageningen, too, there was a plan to close the science shop. But the realization that these civil society groups formed a special niche that matched

WUR's strategic goals led to the science shop being able to make a restart.

The power of Wageningen Science Shop, science for impact

In the years that followed, more attention arose within WUR for impact and value creation. Not only economic, but also social. Research results only gain value when they are applied in society. Within the newly formed Value Creation department, Wageningen Science Shop found a natural place. The focus came to lie more strongly on communication, dialogue with society, interactive multistakeholder processes and supporting researchers and civil society groups in bringing their research results to value.

The strength of the science shop lies in a working method in which the civil society organisations, researchers from different disciplines and students play an important role.

The civil society organisation determines what needs to be researched, contributes ideas about the method of research and will do its best to implement the research recommendations.

The researchers develop the request of the societal group into a research action plan in which they link the local case to scientific theories and models. They make a translation from the local situation to developments worldwide. This allows the research project to be placed in a broader context and allows other organizations and researchers to learn from it as well.

A supervisory committee is put together, in which representatives of governmental organizations, companies and other social parties also participate. They play a role in increasing the impact of the research project. They advise on increasing support for the project and the application and dissemination of the research results. In addition to their ambassador role, they also have a flywheel function. Science shop research reports are not meant to lay idle in a drawer or on a bookshelf.

The research team consists of researchers as well as students. Students, with their open-mindedness and critical learning attitude, provide an important impetus to the dynamics of the research process. The involvement of researchers from different disciplines leads to the integration of different fields of expertise. The fact that the researchers, the societal groups, and the other members of the supervisory committee are actively involved from the start of the project creates greater mutual understanding and makes it easier to apply the research results in a meaningful way.

The composition of both the research team and the supervisory committee are important critical factors for achieving personal satisfaction and project success.

Much attention is paid to the elaboration and presentation of the research results. How can we translate the conclusions and recommendations into concrete action perspectives for the different parties involved? Can the various student reports be summarized into a clear brochure that is accessible to a broader target group? Or is a video, an app, or a teaching module more effective? How do we ensure coverage in local media, professional journals, and academic journals? And what about the role of the social media? Regular discussion meetings with various stakeholders about project progress and interim research results prove to be very important.

Science Shop, a formula that inspires

The concept of the science shop, as developed at Dutch universities, has inspired researchers and students at other universities all over the world. Based on the experiences in The Netherlands, the European Union has supported in different programmes the establishment of science shops at universities in other countries. This has contributed

to the strengthening of Living Knowledge[34], the international network of science shops, which focuses on mutual inspiration and exchange of experience.

The formula developed in recent years within Wageningen Science Shop[35] provides researchers and students with tools to set up and carry out successful multistakeholder projects. This formula is summarized in the Science Shop Impact Guide[36]. As a follow-up, the brochure Creating Impact with Science[37] has been released, intended for a broader target group than just the smaller civil society organizations and social enterprises.

Action Research within Wageningen Science Shop, the researcher in action

Wageningen Science Shop is constantly receiving new research questions from civil society groups and social enterprises. This always requires new and enthusiastic researchers and students who want to share their knowledge and expertise to contribute to developments in society. Thanks to many high-profile projects, Wageningen Science Shop has built an extensive network within Wageningen University & Research.

For students, there are many opportunities within WUR to become involved in action research. Within the science shop, this is possible through courses such as Academic Consultancy Training (ACT)[38] or Facilitating Interactive Processes. There is close cooperation with Society Based Education[39] which helps linking WUR-courses to science shop projects.

34 livingknowledge.org
35 www.wur.nl/nl/en/waardecreatie-samenwerking/science-shop.htm
36 edepot.wur.nl/588321
37 edepot.wur.nl/639798
38 www.wur.nl/nl/en/waardecreatie-samenwerking/collaborating-with-wur-1/societybasededucation/academic-consultancy-training-act.htm
39 www.wur.nl/nl/en/waardecreatie-samenwerking/societybasededucation-4.htm

But also (and perhaps especially) your thesis and internship offer opportunities for action research within a science shop project. Contact your thesis or internship coordinator. Chair groups and Wageningen Career Services know how to find their way to the science shop.

The science shop also offers regularly interesting opportunities for Wageningen researchers. In science shop projects, you are challenged to expand your research experience in new ways, to colour outside the lines and to engage in unusual forms of collaboration. You work together with researchers from other disciplines, with students and, especially with strongly involved and motivated groups in society. If you are interested contact the science shop coordinators.

Participation is a science shop project requires enthusiasm, creativity, and flexibility. Many researchers indicate that they learn a lot in science shop research projects. They mention skills such as project management, collaboration, listening to what is really going on, searching for new ways of doing research.

You may see Wageningen Science Shop as a living lab, an experimentation space, where participants learn from each other. The science shop offers a listening ear and is thus an antenna for what is going on within society. As a result, it contributes to ongoing research programs and to the development of new research themes within WUR.

You could also see the science shop as an advanced post of WUR in the capillaries of society. Besides keeping in touch with social developments, the science shop contributes to increase the application of Wageningen knowledge and expertise in society. It works both ways.

In short, Wageningen Science Shop offers opportunities for inspiring and innovative collaboration between WUR and groups in society. The working method has developed and proven itself over the past 40 years in many different projects. This method continues to evolve. Online opportunities for collaboration have increased, allowing societal groups to have a larger share in the execution of research. Especially parties living

far away from each other can participate more easily. With the concept of Citizen science40, new methods of action research are being developed.

The future

Wageningen University & Research offers space to conduct research to find solutions for larger and smaller social issues. Issues raised by the special target groups of Wageningen Science Shop can successfully become part of WUR research programs.

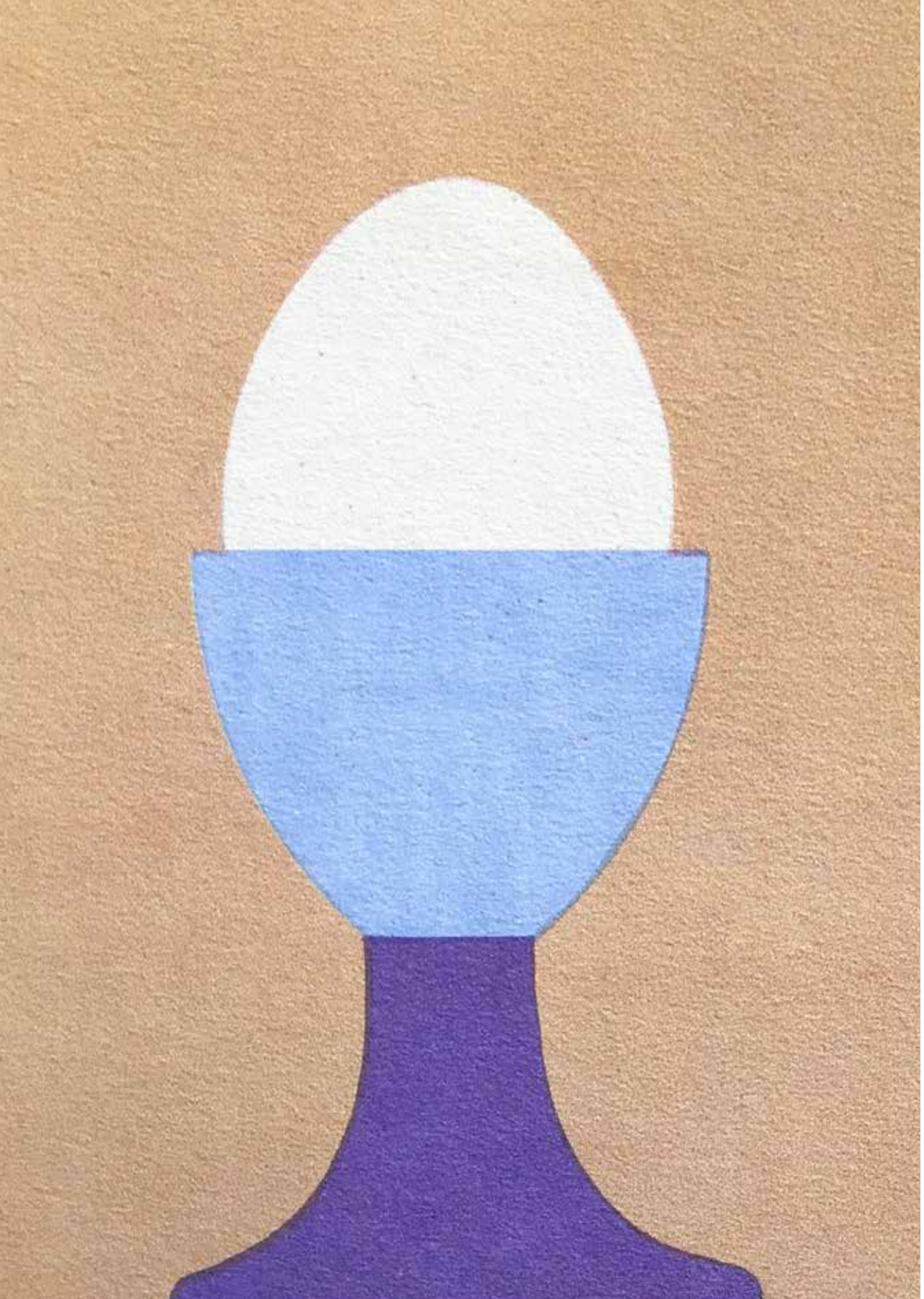
The increased focus on impact does not yet mean that there is automatically more room for society-critical (or society-influencing) research initiated by marginal social groups. After all, the established parties have easier access to university knowledge. They have effective networks and know how to use research projects to bring about processes of change. The science shop is mainly approached by people and organizations that know their way around. For people who are not familiar with research and higher education, the threshold remains high, despite recent initiatives such as a temporary pop-up science shop in a shopping street and paying more attention to neighbourhood initiatives.

Researchers who want to use their scientific expertise to bring about social change must make an extra effort to gain recognition for their projects at the science shop. These are projects with limited budgets initiated by smaller and sometimes controversial organizations. They often require more time and energy than the usual research projects. Mutual coordination, communication to the outside world, working with students and aftercare require more attention. Science shop research is more than just doing research and delivering a research report.

> The future depends on people with vision, concrete ideas, and commitment. Action research can help realize the ideas of those people. Wageningen Science Shop offers opportunities for action research to support and empower groups in society with little money.

40 www.wur.nl/en/show/citizen-science.htm

Wageningen Science Shop originated 40 years ago from enthusiastic WUR-students and WUR-staff who wanted to actively contribute to social change through education and research. Over the years, Wageningen Science Shop has gained experience in many innovative research projects. The need to search for solutions to urgent social issues has not diminished. Let us explore new research opportunities within Wageningen University & Research. Let us make maximum use of possibilities already offered such as Wageningen Science Shop. Let us continue to carry out inspiring and innovative action research projects in the future. Projects that contribute to reduce or solve actual societal issues. Projects that help realize people's dreams.



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