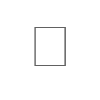
**Transcriptie**

18 april 2025, 09:01a.m.

 **Interviewer** heeft de transcriptie gestart

**Interviewer** 0:07  
So please tell me about yourself a little bit and then we'll get in into it, because I'm very curious what your trajectory has been and what you actually do at [Name institute 1].

**Respondent** 0:27  
Well, I started out studying biochemistry, microbiology, that was my undergraduate degree in [Name institute 2], so from [Place 1]. So I did that, graduated from that and I basically decided I did not want to be so lab based, which is essentially what biochemistry is most of the time, kind of revolves around the lab. And I decided that wasn't really for me, I like biology, the whole science aspect of it, so it wasn't like I want to completely be outside of a lab all the time, it's still part of the whole area.  
But I decided that I wanted to do something which is a bit closer to working with the outdoors and less locked away in a lab somewhere. So I did a master's in marine sciences, always planning to focus on marine biology, but I wanted to keep it broad to begin with. So that's how I ended up in the Netherlands, I did the masters in [Name institute 3], because that was the only place that actually had a master’s programme that really appealed to me, so that was literally the only reason that I came to [Place 2], because [of] that one specific Masters programme and then I finished that, that Masters and I hadn't really been planning to do a PhD, I was actually kind of planning not to do a PhD. The plan was to deliberately not do one and then…

**Interviewer** 2:17  
Why? Why was that? Why didn't you want to deliberately do a PhD?

**Respondent** 2:23  
I did not want to be in academia so much, that kind of still holds true. I mean, I don't want to continue with academia once the PhD is over again, anything can happen. I did a PhD now, which I didn’t plan on, but it's not really the direction that I see myself going in. The whole academic system just didn't appeal that much [to me] basically, I figured I'd rather pursue what I'm interested in and other directions, maybe a private company, whatever that ends up being. But the right PhD came along and actually it was with the research group with whom I did my master's thesis. So what they kind of said to me, there’s a PhD you should apply for. And eventually I did and I got it and yeah, I'm really enjoying it.

**Interviewer** 3:26  
What kind of research do you now do? What is it based on at the [Name institute 1]?

**Respondent** 3:32  
It's marine ecology. So I'm in the Department of Coastal Ecology and it's about restoration of ecosystem engineers, specifically mussels and oysters. The main area that we work in is the Dutch Waddensea [and] which is on one muscle species and two oyster species and we work on restoration. I make artificial reef structures which are built in specific ways so there's a biomimicry element to it, basically we take principles that make natural Bivalve reefs work and we artificially build those into structures and then put them out in fields and test them. That's [it] in a nutshell.

**Interviewer** 4:27  
Very cool. So that means that you're also engineering yourself the structures that you're placing in the Waddenzee?

**Respondent** 4:38  
Yeah, I'm involved at all stages of the design and production. Dreaming up what the structure is going to look like and then trying different types and figuring out how to make it into what we want to make it. And then eventually putting it out [in] the Waddensea and running the experiments and analysing it, doing all that. So yeah, I'm involved at all stages.

**Interviewer** 5:01  
Wow, that's really dope. Sounds really practical.

**Respondent** 5:05  
Exactly why I like it, it’s very practical.

**Interviewer** 5:09  
And if you look back and also see your course of where you are now and where you've been, how does the chemistry - where you started off - does that still involve in your main interest or has it shifted over the course of your studies and your trajectory that you did now being at [Name institute 1]

**Respondent** 5:31  
That was biochemistry that I started in. How has my trajectory shifted? Well, I'm still interested in biochemistry [in] particular things, marine chemical ecology I think is a really interesting field. Has it informed my direction much? I mean, I've always been interested in biology and with an interest in chemistry, generally an interest in science, but more so in the biological end of the spectrum rather than the physics end of the spectrum. It’s been [a] part of my path. I guess it gives me certain advantages, like when you're trying to think about things on a molecular level, that's not the core of my work, thinking about things on a molecular level, but it definitely comes up sometimes, particularly in an experiment we did last year involving proteins in oyster shells. And just having that grounding in organic chemistry and molecular biology, [it] definitely helps with what I'm doing now. Of course it got me to realise that while I like science, I don't want to be in the lab.

**Interviewer** 6:55  
So in general - I also think I had a question about this in the questionnaire, but you have a lot of different interests and you say you're very much interested in the biology as a biologist. How good should you be in the physics and the chemistry and also maybe the maths, how does that relate to your work? Do you see, I actually need all of those [in] some kind of sense or [for] a biologist [it] also can be purely biology?

**Respondent** 7:31  
It's been said that biology is applied chemistry, chemistry is applied physics and physics is applied maths. There's some truth to that. It's not like completely true, but in some sense there is a spectrum there, right? So to be a biologist, I think you can be a biologist without much… you are [a] behavioural psychologist or behavioural biologist, I don’t know exactly what that entails in full, but it's maybe not that involved in the chemistry end of things I would assume. But all these things are useful at times, OK, the chemistry is useful when you're thinking about a chemical ecology angle, which I happen to [do] in my PhD at times, and then the physics is useful sometimes. So recently I run these large field experiments and I was trying to work out what the drag force has to be on a float in order for it to be able to drag its anchor across the seabed. So it's easy physics, just like basic physics and then maths, I use arithmetic all the time, so I think I think having a strong basis in very basic maths, it's been very helpful in my experience, it's very much the type of maths that involves numbers. It's not the type of maths where it gets so advanced that you don't use numbers you know, but it all helps, it definitely all helps as far as it is work for me. But I do have rather broad interests, so maybe I naturally gravitate towards incorporating those things anyway, but it all, my education and all those things. definitely has been to use to me.

**Interviewer** 9:35  
And if we go a level higher because some also say that math is actually applied philosophy. You're in the in the world of conservation, is there certain values and certain ethics that's also part of your thinking? And if you look at the philosophy side, that also comes about in your work?

**Respondent** 9:57  
Sorry, what was the last bit there?

**Interviewer** 10:08  
How that relates to your work: within the department being busy with conservation, I assume there is some morale and some ethics involved, or at least values of what is good and what is bad.

**Respondent** 10:21  
Yeah, for sure. So certainly when I took the PhD project, that was part of it. I had happened to get really interested in mussels and oysters at the time and they're like ecosystem engineers, they're pretty important basically in ecosystems. So I got involved in that and how they lie at the basis of certain natural systems in which they appear and those are a good one to focus on if you want to work on restoration essentially. And then there was also the fact that there are species used for food, that's relevant to human interests, so in terms of my philosophical angle on the whole thing, I got into ecology because I care about the natural world and I think most people do. And yes, it's important to me, it's an important thing. I do think it has to be balanced with the requirements of humans or societies, sometimes people can get a bit unbalanced on both sides of this issue. Some people think that you shouldn't care about societies or the functioning of societies, because topics related to ecology come first and then other people think ‘Who cares about the natural world or ecosystems?’ Because I know we have to build these things or achieve these economic targets, both things are important. I think a balance is always important. So I guess, in terms of my philosophical basis of taking this project, I mean mussels and oysters do sort of fall in between those two viewpoints. They're important for producing foods and ecosystem services and they're important species, naturally. Because this is all stuff. In the day-to-day of the projects, I'm not kind of thinking ‘Oh, restoration’, that's not on my mind all the time. It's more the details of the day, you know? There’s obviously an underlying reason or reasons why I'm doing this and then that kind of gives direction as a whole.

**Interviewer** 13:11  
And you said that it needs to be a little bit balanced on both sides of the opinions. And do you think that is the case [at the] [Name institute 1], that it's fairly balanced in both the ecological sides and the human sides?

**Respondent** 13:31  
Well, the focus is definitely more on the ecological side as you would expect, when it comes to issues with farmers also. Typically there's this kind of dichotomy between farming and nature, right? Or perceived dichotomy. And I don't really think it has to be a dichotomy, but in [the] [Name institute 1] for example [the] sentiment would very much be on the nature side of that debate. And then if there is any kind of supports given to the farming side, it's in the sense of we need to preserve these ecosystems and take account of ecology in this way because then that will also help farms, it will help farm systems. But, no, I would say like the balance isn't really there. Speaking generally, painting with a broad brush, it's definitely more in one direction than the other.

**Interviewer** 14:50  
That's a very good observation and an honest opinion. And the parts that you do the engineering in, that mostly stays within the institute or do you have collaborations with other institutes or certain conservation groups or [others] that you work with?

**Respondent** 15:11  
There are a couple of different groups involved. The field work company in [Name place 3]. They are basically practical, technical support. That's where we build the things and we brainstorm and [come] with technical solutions and we have like a big 3D printing machine. So we work with 3D printed polymers and a concrete, a non-industrial concrete that we've sort of devised our own recipe for.

**Interviewer** 15:33  
Cool.

**Respondent** 15:44  
Yes, we make all that happen with the fieldwork company and it's [a] very dynamic place: always a lot of ideas and actually bringing those ideas into reality. And then we also work with [Old name institute 4], now they are called [New name institute 4], they are consulting, ecological consulting. And then there's funding from Rijkswaterstaat and then from the [Name institute 5] and a bit from [Name institute 3], but we don't deal with those so much, I would say like 90% of what goes on is just [Name institute 1] and the fieldwork company.

**Interviewer** 16:21  
OK, fair enough. Because are you in some kind of way also… You're mostly researcher, right? You're not involved in any education at one of the universities or at [Name institute 1] in some kind of way?

**Respondent** 16:36  
I am actually leading a tutorial as a TA in [Place 2] next month, so I only did that once before when I was a master’s student. And I haven't done any teaching apart from those two occasions, one of which hasn't even happened yet, but I supervise students pretty heavily, so I take them on for master thesis projects. I've had, I think, maybe six master students and one HBO student, and then help out with a range of other things like running projects, we're working as a team basically, or in some kind of supervisor role but yes, giving classes hasn't been a part of my work at all, really, but supervising students directly has been a very big part of it.

**Interviewer** 17:37  
And how does that go, when you take them on? Are you enthusiastic about it? And what I'm very curious about, maybe to give [some] kind of direction, what are they very good at when they're coming from a masters - often they have been for a lot of time in university when they come to you - is there things they're very good at and some things they're maybe missing in the[ir] way of thinking, the[ir] way of doing? And also, what do you think of yourself of doing it: do you like being that guiding instructor?

**Respondent** 18:19  
Well, those are good questions, stuff that I also reflect on myself. So do I enjoy it? Yeah, I do enjoy it. I enjoy basically taking on the students and then we have to work to come up with the experiments and kind of solve problems. And just going to work together on whatever we may be working on. I definitely have grown in my role as a supervisor over the years, so now I'm 2.5 years in, I've had a range of students and I've learned something each time about a student because obviously they always have different personalities. I definitely have learned a lot and it is something I'm enthusiastic about, working with students.

When I started out, when I first started the PhD, I was essentially still a master student. I was only a couple [of] months out of my master's, and I took on a master's student straight away. So there wasn't really a lot of difference between us in terms of progression or knowledge or experience, that's kind of interesting. But something I certainly realised during that first year was that you need to be a supervisor first and a friend second, because when you're working with someone like that - kind of closely all the time and they're the same age, roughly the same experience - you're kind of inclined to just, well, they're a colleague, but they’re friend, you know, but sometimes you need to be a supervisor rather than those things. I kind of realised this because the student I was working with, she would… Sometimes basically she needed a friend, sometimes she needed a supervisor and I think it wasn't always clear to either of us which I should be at a given time, right?

But that was honestly one of the most key lessons I've learned from supervising, and I've put that into practise since then and it's actually been quite helpful in how I've worked with students. Obviously you can be friendly and all that, be friends in some sense. But it needs to be within the super structure of being a supervisor as well, and I noticed that with my own supervisors as well, I don't have to do it consciously, I had good relationships with them, but always at the end of the day, it's pretty clear who's the supervisor, you know? Which is good, I think it's really good to have it that way.

And at the end of my first year as a PhD student, I could definitely see the kind of progress I've made from master student into PhD student. That goes some way to answering your first question.

And then the second question, in terms of the differences between different students. I've had quite a number of university masters students. They have mostly been university students and then I had one HBO student and something that stood out to me was I found the HBO [student] to be practical in a way, she was more capable of taking initiative with some things. Which I guess is something they're probably trained for, but the difference was, it was pretty [re]markable to be honest. She was more capable of taking initiative and I feel [that] a lot of the time the university students still really worry about the details and don't want to get things wrong in a way, whereas with her she would just go for it and I would of course correct [her] when that was needed, but most of the time I was able to leave her to her own devices and that has not been the case so much with the university students. And I've only had one HBO student, what does that really tell me, but I do think the fact that she was doing HBO made a difference in that sense because I've worked with other people a bit who've done HBOs and I've also heard reports from others about the difference there and there does seem to be a bit of a trend of that. So you know, just the ability to take initiative and be practical about things.

**Interviewer** 24:58  
And you said you could leave the HBO student at some kind of independence. You could leave them alone with the devices. That was not the case with the university students, in your opinion?

**Respondent** 25:09  
Yeah, not really. Again, this is one of the things with the friend-supervisor balance, sometimes I think university students are a bit more likely to be like ‘Why aren't [you] helping me with this thing?’ Well, sometimes you got to figure things out on your own, little things obviously. I was trying to help out, but there has to be some initiative taken as well, and I did find with that one HBO student, she was more capable of filling in the blanks, basically she could fill in the blanks a bit better.  
Things didn't have to be spelled out for her so much, and I don't want to, I'm not trying to say anything harsh about university students, but I kind of felt like the HBO student was a bit more capable of filling in the blanks, or maybe even less scared to do so.

**Interviewer** 26:15  
Maybe more confidence, it also seems, right?

**Respondent** 26:17  
Probably, yeah. So that's something I've noticed.

**Interviewer** 26:25  
And how did it progress over time? How did they all come about and settle in with the work? Did they became more capable as the ride went along? For all of them?

**Respondent** 26:38  
All the different, yeah. That's also been sort of a balance act and it is different for each student. I suppose one of the main things has been striking a balance between giving them enough work, not too much work, that they don’t feel overloaded, but not also [with] so little work that they feel like they're just hanging around doing nothing because both of those things have happened, so that's a fine balance to strike.  
And have they developed into the role more? Yeah, I guess so. I'm trying to think of different students. Yeah, it really depends on the students, but I I would say generally, yeah, as time goes on, they settle into a more… because when they start out, there are a lot of moving parts to the projects and sometimes they join and they were like, what's going on? And I had a student drop out there as well recently.  
So actually she was doing a master's thesis and she dropped out after a few weeks. And I kind of devised a mini project for her to do something else, just to get a few credits. I think it was the routine and lifestyle [that] didn't work for her because she had to travel to [Name place 4] quite a bit, and she had to do this work where she was deshelling cockles, which is not the most pleasant work, but it is really different with each students because they all come in with different backgrounds, but generally they have settled in more as time has gone on, they've learned a bit more about the projects as time has gone on.

**Interviewer** 28:36  
You at least hope that over the time the learning happens, of course. Where there some surprises that you had both in the negative and both in a positive sense when they came in, what they were capable of and what they were doing, or was it just neutral and you didn't have any expectations?

**Respondent** 28:57  
I didn't have a lot of expectations, I suppose. No I would say I didn’t have a lot of expectations, but the only the only thing that really sprung to mind when you asked that was, sometimes I have a bit of a tendency to put too much time myself into the student projects, if you know what I mean. So there've been a couple of times where I had to deliberately involve myself a bit less because, if it works there and you work with the students, you're going to do it. And it's simple, it's part of my PhD, even if it's more of a student project’s side of it. But when we were in the second year, we started prepping for the field experiment we were going to run, and I remember we were printing, 3D printing these structures and building them and everything. And I had in my head that I was going to build all of them by hand, which I'd done before. Then I remember one of the students I was working with, then said ‘Shouldn't you let us do this?’ Yeah, I should, so I would say, the only thing that came to mind when you asked about expectations was… I mean, I probably expect them to like work a bit less than they should sometimes, but I think that's more of a me things, that’s like some general observation.

**Interviewer** 30:42  
And the students that you have taken on, if you look at yourself, you've also been a student, do you think from your university aspects that you have been well equipped with what you are doing now or are there major things that were maybe missing or did they just hit the nail right on the head with what they taught? Both maybe your bachelors and your masters.

**Respondent** 31:23  
I suppose with the bachelors, I was trained for something different, [so] it's hard to judge them by the standards of [a] biology PhD, but to the extent [of] that what I learned in studying biochemistry, molecular biology has stood to me. Sure, they did a good job, it kind of applies, but ecology is one of those fields that can be very broad, it can be all-encompassing, I guess it would be hard to see any kind of biology degree going completely correct. And then in terms of the masters, that also covered all aspects of marine sciences which I was looking for. And [to] the extent it prepared me for this. I definitely built skills during my masters, certainly from then on I got better at finding and reading and understanding and using scientific papers.  
My writing improved and I suppose in a less technical sense, I also gained the belief that I could probably go and do a PhD, not sure I would have thought that so much during the bachelors, I didn't really think it was going to be something I ever did.  
And then also I transitioned into a different field and I was not really sure how this is going to go, the Masters definitely helped me gaining some kind of technical skills, not with building structures or anything, but just in terms of the things you generally have to do in science and then just developing my skills. And also me recognising that I developed these skills and I was able to do them. It was quite helpful in that way so.

**Interviewer** 33:13  
And when you came at the [Name institute 1], were there major things that you had to learn, which were very specific for your field or were [you] like ‘I need to… OK, let me get to this.’ And over time, you developed more and more in that?

**Respondent** 33:39  
Maybe writing, you know, it's pretty much the only thing, that is actually something that I'm only really starting to pick up the skill of now. I'm just writing up my first manuscript now, and it's quite a different skill to writing [than] students assignments.  
There's that. But again, I'm 2.5 years in, I feel like that's just starting to click now. It's actually doing it now.

**Interviewer** 34:11  
Because what is the difference, you think, if you had to pinpoint that?

**Respondent** 34:17  
In my experience, when you're writing some student submission, you put on the page whatever is relevant in a way, [with] writing an introduction, you can put in there like… you just tick the boxes. But [with] my very limited experience of writing the manuscripts, you really have to craft the narrative a bit more and you almost have to reverse engineer the experiments. That actually quite helped me because when I started writing this manuscript, I was kind of writing it like it was a student’s assignment, and it felt, it was actually kind of confusing. I was… I don't know why, I'm writing certain things, the standard things that I would write about, but I was like… [it] doesn't seem [like] it describes the experiment where it's relevant. So then I sort of reverse engineered the experiment and I was like ‘We did these things and we wanted to find these outcomes.’ so based on that, what should go in an introduction. And then I did it that way and [it] made a lot more sense and actually more enjoyable to write. So that’s definitely a skill that has developed from student to PhD. And then supervising, it's been a huge aspect of my PhD. It's something that I've developed and I think I just kind of [have] gotten better at it over time.

**Interviewer** 36:00  
And what are you going to teach when - what was it, next month?

**Respondent** 36:07  
GIS.

**Interviewer** 36:08  
Oh, yeah, yeah, this location thing, right, the coordination? Cool, nice that you have this combination. And what did you teach in the past? Like the two courses that you taught?

**Respondent** 36:25  
I did the exact same thing when I was a master student, because one of my supervisors, he was also my supervisor during my master's thesis, and during my master's thesis I had to learn how to use GIS so then he offered me a role where I could teach and then I actually asked him about half a year ago if I can do some more teaching stuff, take some lectures or whatever or give some lectures and he was like ‘There's not a lot to be done, but you can do the thing again.’ And I was like, OK, I'll do it.

**Interviewer** 37:09  
Nice that your supervisor is recurring, that you also still work with him now.

**Respondent** 37:15  
Definitely. He's been a real mentor, so I would describe him.

**Interviewer** 37:20  
And what do you think of the Netherlands?

**Respondent** 37:25  
I like it. I probably won't stay here after the PhD, I think I'll go back to Ireland, but if I wasn't going to Ireland, the Netherlands would probably be [my] first choice. A lot of things work very well. There's a great infrastructure. I mean, I've just got[ten] off the ferry, which goes back and over to [Place 5] all the time. I'm going to catch a train down south later today. Things are laid out very well and to travel across the country for two hours feels like nothing, whereas in Ireland to go across the country for two hours feels like a really big trip now. But there's not a lot of nature. Which is, you know, I mean, I am [an] ecologist, it's something I like to be around. So it that is something which I find a little bit harder to deal with at times.

**Interviewer** 38:23  
I always have that when I fly back from wherever I come from and go to the Netherland and I look out of the plane window [and] you just see all these little ‘kavels’ [as] you call it in Dutch, the little squares with all the farming that's happening. And I'm like ‘Oh man, for every single square centimetre we just have some destination plan.’

**Respondent** 38:31  
Yeah, absolutely. It's super developed. And personally, I think I prefer places with a bit more of a healthy chaos. I'm a fan of the Netherlands, I’ve lived here for nearly five years, since it's been very good to me, the Netherlands have been very good to me.

**Interviewer** 39:10  
It's nice to be stationed at [Place 5]. That means at least you have some part of the nature, and I think it's a nice community, right? That's there.

**Respondent** 39:19  
At the [Name institute 1] or [Place 5] itself? So I don't, I don't have my finger on the pulse of [Place 5] too much, because I live in [Place 6], but I like [Place 6], it's peaceful, I suppose it's a bit less organised than other places in the country, which I actually like. And [Place 5]’s the doorstep. So I feel pretty lucky overall, you know?

**Interviewer** 39:49  
Yeah, cool, man. Nice to hear about all these things. I'm going to have a quick check, but I think we went through all the points that I wanted to address. So that's that actually from my side. Thank you so much for everything that you shared and everything that you said and your honest opinions about things. Do you have questions? Are there other remarks that you still want to make, that's still in your head and like ‘oh, yeah, wait, that's also…’ or maybe a question to me? Whatever.

**Respondent** 40:22  
What's the exact nature of your research again?

**Interviewer** 40:26  
What do you mean with nature?

**Respondent** 40:29  
What is the research that you're doing here?

**Interviewer** 40:33  
The research that is do you mean like the research question?

**Respondent** 40:37  
Yes, exactly it.

**Interviewer** 40:58  
The research question literally is ‘What is the importance of theoretical knowledge within biology education and biology research.’ And it relates to ‘What is the role of theory and making theory in the field of biology’ and it comes a little bit from the assumption that I have, that was based on [the] observation that there seems to be some kind of friction sometimes for biology. Lot of theoretical work that you do and that you sometimes need to do, but also the practical nature that a lot of people have, especially with nature and the concreteness that it has. So what is the role of theory and conceptualization within that field? Because if I speak with mathematicians, it's some kind of magic that they do and all the things come from somewhere and [I am] like ‘But these things aren't real, right? It's a concept.’ But there's so much involved in some of [that] world. Which I see very differently with biologists. So I was very curious about [that] distinction, and if that is a real distinction or not, or so just something in my head.

**Respondent** 41:56  
Yes, so I guess I do have some extra thoughts. I've definitely noticed a certain gap between theory and experience in what I do. I can't really speak for biochemistry because I was doing that at undergrad level, it's kind of different, but certainly in what I do now. So the first time it became apparent to me was when I was doing the Masters, doing a coastal ecology course and we learned about three species that were living in the sediments. It was some kind of bacteria and then some kind of mollusk and then something else. And then for some triangle interactions between them, like a flow of entity, so to speak. These different things going on, they have a certain mutualism going on, and this one is like [a] parasite or whatever. And it was very clearly laid out in the page, and I can see how that works. And then I remember the first or one of the first times that I really went out to the field, things are not as clean as that at all. And it's a lot more fuzzy and when you're talking about something like nature and ecosystems, almost by its nature it means everything right, an ecosystem is everything that's within that area. It’s all the biotic and abiotic things, which is literally everything. So it's very hard to break things down to really specific interactions and components, as if they're like gears and machine, I think it doesn't quite work that way.  
Whereas maybe in maths or physics there's less of a gap between those things, from theoretical physics to reality. It's maybe a bit more predictive in some ways, I'm not a physicist, so I don't know, but that's definitely something that has stood out to me in what I do now, just this gap between theory and practise.  
And it's also why I wanted to take on a practical PhD in the first place. I do think it's a bit easy sometimes [to] get bogged down in theories and models about things and sometimes it needs to be, sometimes those things need to be grounded in real things that are happening and basically there can exist a gap between those two things. That has definitely been maybe why I got interested in your research in the first place.  
I thought that and that definitely occurred to me that that distance is there and also when you have results about something, you have to interpret it. But that's also something else I've learned through my scientific career. When you're starting out, you see something in a scientific textbook and you're like ‘Oh, that must be true, if you question that…’  
And then as time goes on, and especially once you start doing experiments, you see [that] the results really depend on the methods. And the interpretation really depends on the results and then on the person involved. And also the narrative you're trying to craft as well, which is the way it's done.

**Interviewer** 46:06  
It's not always as clean cut as it as it seems. I always had this idea that everything is so clear, and this has been proven, and this is how it always has been. But if you look beneath, if you just pull over the stone and see what's below there's a lot to discover there even.

**Respondent** 46:20  
Definitely, and I've had this conversation with friends as well, who are like non-scientific, I mean, they're not in science. They'll read a scientific paper and they basically read the title and be like ‘Look, that's here's, the proof of this thing.’ And then you go and read the paper and it's not really saying that. And it has a certain way of arriving at that conclusion and it's just not really… if you just read the title,  
or have some like very loose idea of what the paper means, it's not really the right idea. And I think maybe that's something that happens in the way people perceive science more broadly. Because, I mean, I certainly did. And it took a career, at least the beginning of a career in science to see that it's not quite that way. Of course, I think that people could be a bit more aware of… generally science is also an art.

**Interviewer** 47:30  
I don't know if you heard about the news, but that they found proof of life in the universe. Did you hear that news?

**Respondent** 47:40  
I think I probably hear that news like every few months. But I didn't hear the specific piece of news.

**Interviewer** 47:44  
Yesterday there was another research, another researcher that said that millions of light years away, there's some kind of planet and they have this gas within the atmosphere - DMS, dimethylsulfide something like that? – and they said ‘OK because it's there, that means automatically that there's life, so we have proof that there's life.’ and there's so many things that don't add up here. You want to prove things so badly right now.  
So I understand what you mean, but I think that's also the popularity of science sometimes, right? And maybe also the article and the status that you and the article have to produce and the status that you of course want to achieve and acquire. So interesting observation, but then you said you noticed that gap between the theory and the practise. In your opinion, that gap, is that something there and it will always be there? That’s also a natural thing or have we made that gap and is it something that we maybe should fill again?

**Respondent** 49:00  
Well, I think when you're working with very complex systems, you do need to break it down into components to an extent. And there's this difference between complex systems and complicated systems, and I think maybe one of the issues with representing ecological interactions, is that you take a complex system and you break it down into a complicated system. Which is a different thing by its nature, but there's necessarily a way around it because you do have to understand things in slices in a sense, and when you look at something scientifically you automatically have to isolate certain conditions, whereas if science is the study of how nature behaves, there's a lot going on there and you can't do it all at once. So generally it works as a system, certainly for understanding these things like progressive levels of abstraction or progressive levels of understanding. They say that in physics you learn what an electron is when you're in secondary school, and then you go to university and you study physics and it's something completely different. And then if you go on do a PhD in physics, then an electron is something different again. It’s all kind of steps on the road, they are all blocks in the wall, so have to do it in a way, but maybe it should be a bit more acknowledged that that is how it is. They're not easy answers, they're just practical answers, they're answers that work for the purpose they are intended for.

**Interviewer** 51:05  
I'm glad to hear that you found - within that melting pot of all these things, during your educations - that you found a way of, OK, I also want to do something practical and you just went for it. You also paved your own way in that sense and took the freedom. That sounds really dope. Alright man, that's it for me. Something else left that you want to say or we covered it pretty well?

**Respondent** 51:38  
Yeah, I think we covered it.

**Interviewer** 51:40  
Perfect. If you're interested, I will – and maybe you put it on in the questionnaire as well - but as soon as I have the manuscript or anything, that will take a little bit of time, of course, you know how the whole process goes, but I can e-mail it to you for sure. If you're interested.

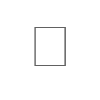
**Respondent** 52:00  
Yeah.

**Interviewer** 52:02  
Well, the sun is shining, slowly comes out there. So I want to wish you a very lovely Eastern weekend and thank you so much for your time, for taking the time to talk with me.

**Respondent** 52:17  
No problem. And have a great rest yourself.

**Interviewer** 52:21  
I will. OK. Have a nice day.

**Respondent** 52:24  
Yes. Bye bye.

 **Interviewer** heeft de transcriptie gestopt