Inge van der Weijden
Evan de Gelder
Christine Teelken
Marian Thunnissen

Personal stories from PhDs about their careers
within and outside of academia

Which grass is greener?

CWTS
Meaningful metrics

VU
VRIJE
UNIVERSITEIT
AMSTERDAM

Fontys

Universiteit
Leiden
The Netherlands

Hans Sonneveld, director of the Netherlands Centre of Expertise for Doctoral Education
'Very little is known about the large numbers of PhDs who have found work outside of the academic world. What kinds of jobs do they do? Did they leave academia willingly or unwillingly? Are their skills in demand? And are they happier than their counterparts with university positions? The portraits presented here shine a spotlight on this large and varied group, and should be required reading for current PhD students and for supervisors of PhD training courses who want to ensure that their students are well-prepared to enter the non-academic labour market.'

Ilse Schenk, EURAXESS national network coordinator for the Netherlands
'I wholeheartedly applaud the makers of this publication. It's full of clear, practical and inspiring information for everyone who works with PhD students and postdocs who are considering which steps to take next in their careers. Presenting this information in a non-academic format such as this will likely cause it to have a much greater impact. The publication provides an excellent, highly readable overview of the challenges and opportunities awaiting PhD students and postdocs who are considering careers outside the academic world. This trailblazing document contains answers to questions that I believe many PhD students and postdocs have, and it may certainly serve as a source of encouragement. There is a real need for information on this subject, both here in the Netherlands and in our neighbouring countries. In short: highly recommended reading for everyone.'

Ramona van der Linden, HR policy officer at Tilburg University
'These portraits are a valuable resource, both for PhD students and for universities in their roles as employers. The stories told here offer a glimpse into the world outside of academia. The interviewees describe their career paths from a personal perspective, providing guidance on transitioning into the "outside world": How did the experience they gained while pursuing their PhDs help them during the transition process? What are the potential pitfalls involved? What is the best way to promote yourself and your career? And what can universities in their roles as employers do to provide support?'

Stefan de Jong, grant advisor at Luris, received his PhD in 2015 for his study of scientific valorization policies and was awarded a NWO Rubicon grant to conduct further research
'"Which grass is greener?" provides a welcome glimpse into life on the other side of the fence, which to many academics can seem imposingly high. This publication encourages PhDs to ask themselves the types of questions that will enable them to discover their own unique skills and motivations. And not just those who are looking for jobs, but also those who have already secured a position. After all, academics, of all people, should be prepared to regularly re-evaluate their own assumptions.'

Daphne Truijens & Lieke Kools of SMO Promovendi ('Society and Enterprise Foundation')
'The stories contained here will resonate with many readers. All too often, PhD students (and supervisors) focus solely on successfully completing a dissertation, to the exclusion of all else. This is a shame, since PhD programmes represent a kind of trial period in students' academic careers, in which they have the opportunity to shape their own futures. We prefer to think of it not just as a time for achievement, but also as a time for learning. It's actually rather strange that so little time is spent helping PhD students to develop practical skills.'

Preface

The number of PhDs awarded by Dutch universities has doubled since 2000[1]. Of those receiving a PhD in the Netherlands, 68% will ultimately be unable to find work at a university in the Netherlands or abroad (sometimes after first holding a temporary position)[2]. These PhDs will go on to find work in a non-academic setting. Until recently, there has been little insight into the types of careers pursued by PhDs after receiving their degrees.

In order to gain a better understanding of the subject, we decided to examine the various career paths of PhDs in the Netherlands. In this publication, we feature the personal stories of ten of our study participants, detailing their careers both within and outside of academia. They reflect on their academic careers and on their transitions into the non-academic labour market, sharing their experiences and telling what they enjoy about their work. They also discuss the challenges they faced, as well as the types of transferable skills they gained during their studies that have proven useful in a non-academic setting. The ten portraits of PhD graduates are complemented by three portraits of employers describing their experiences working with PhDs. These 13 unique portraits were selected from a total of 39 interview respondents and were approved by the interviewees themselves before publication.

The personal accounts featured in this publication contain a wealth of information and recommendations for PhD students, universities and employers alike. PhD students and graduates will find valuable career advice. For universities, the portraits offer the opportunity to reflect critically on how to be better employers for PhDs. And for employers outside the academic world who currently employ (or are considering employing) PhDs, these portraits provide an impression of the strengths and weaknesses of PhD graduates, as well as advice on how best to leverage their transferable skills.

Due to their highly personal nature, the stories featured here cannot be considered comprehensive or representative of all PhDs. But taken together, these individual accounts provide an impression of the rich diversity of career opportunities available outside of academia. We're grateful to our interviewees for their willingness to participate in creating this publication, which will hopefully serve as an inspiration to young researchers and to employers.

Dr Inge van der Weijden - CWTS, Leiden University
Evan de Gelder, BSc - CWTS, Leiden University
Dr Christine Teelken - Department of Organizational Sciences at VU Amsterdam
Dr Marian Thunnissen - Fontys University of Applied Sciences

[1] http://vsnu.nl/en_GB/f_c_promovendi.html

[2] rathenau.nl/nl/publicatie/promoveren-nederland (in Dutch)

Contents

PhDs working in positions outside the academy

Employers of PhDs working in positions outside the academy

Dr Frits Rovers

Manager for various employees with PhDs

Programme coordinator for civics teacher training programmes at Amsterdam University of Applied Sciences

p. 28

Maudy Dekker, MSc

Employer of PhDs and non-PhDs
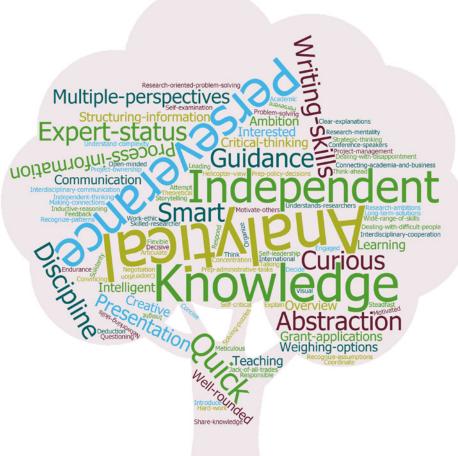
Specialist programme coordinator at NCOI

p. 30

Dr Eddy Boot

Manager for various employees with PhDs

Research manager at the Netherlands Organization for Applied Scientific Research (TNO)
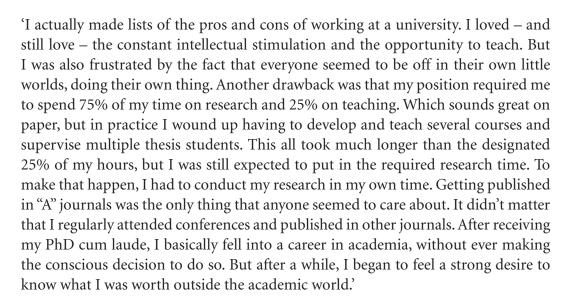
p. 32

Conclusions

p. 34

Eefje Boef

'After earning my Research Master's in Linguistics, I was invited to apply for a PhD position by writing a proposal together with a professor. When I found out I hadn't been accepted, I figured I'd just pursue a second Master's degree instead. But then I received a call from the person who would later become my PhD supervisor, telling me that a vacancy had arisen and that I could join the PhD programme, after all. In retrospect, I now see how quickly I was pulled into the world of academia without taking the time to consider other options. For many in my department, including the PhD supervisors, leaving the university was unthinkable. So I wound up doing several postdocs. It wasn't until I was forced to take a month off to recover from an operation that I finally took the time to ask myself if this was really the kind of work I wanted to be doing.'

I wanted to know what I was worth outside the academic world

'I actually made lists of the pros and cons of working at a university. I loved – and still love – the constant intellectual stimulation and the opportunity to teach. But I was also frustrated by the fact that everyone seemed to be off in their own little worlds, doing their own thing. Another drawback was that my position required me to spend 75% of my time on research and 25% on teaching. Which sounds great on paper, but in practice I wound up having to develop and teach several courses and supervise multiple thesis students. This all took much longer than the designated 25% of my hours, but I was still expected to put in the required research time. To make that happen, I had to conduct my research in my own time. Getting published in "A" journals was the only thing that anyone seemed to care about. It didn't matter that I regularly attended conferences and published in other journals. After receiving my PhD cum laude, I basically fell into a career in academia, without ever making the conscious decision to do so. But after a while, I began to feel a strong desire to know what I was worth outside the academic world.'

'During one of my performance reviews, I shocked my supervisor by admitting that I was unhappy and was unsure if I wanted to continue working at the university. I was offered career counselling for the first time toward the very end of my academic career, but I didn't actually make use of it. Shortly thereafter, I left. At the time, my

Dr Eefje Boef (1983)

Linguist

Test developer for Cito since 2015

university contract was still valid for longer than my current contract. Many people told me I was crazy for giving up such a good job. They would do anything for a position like mine, and here I was just walking away, saying, "This isn't for me; I feel like doing something else."'

'It sounds a bit silly, but I actually just googled "education" and "consultancy", which led me to apply for a job as a standardized test developer for Cito. My academic background was one of the reasons my supervisor hired me, since it proves I'm capable of doing research. I believe there are plenty of career opportunities out there for postdocs. You just have to be realistic and be willing to start lower down on the ladder. You can't expect to become CEO right off the bat. It doesn't matter if you have a hundred PhDs; if you don't have hands-on experience – in my case, in designing tests – then you'll have to learn a lot before you can progress in your career.'

'Given my research background, one of the key questions during my interviews with Cito was whether I was capable of working in a production-focused environment. I wanted to experience being a productive part of a well-oiled machine for designing tests and assignments. In general, I'm not overly concerned with performance indicators. When it comes to performance reviews, I usually just have a quick look at the assessment criteria the day before. My supervisor recently told me that I sometimes focus too much on content and on explanation, and that I should perhaps pay more attention to processes.'

'The only thing I really miss from my university days is teaching. I regret not earning a Basic Teaching Qualification (BKO). The university never really encouraged us to do that. I'm happy with my current job, though I'd like to be more involved in consultancy or management. I'd like to know what I'm capable of in that regard.'

Lobke Aelbrecht

'Many of my friends were already pursuing PhDs, so when one of my professors invited me to join the PhD programme while I was doing my Master's degree, it seemed like the next logical step. During the PhD programme and as a postdoc, I discovered my strengths and further developed a wide range of skills: attention to detail, independence, flexibility, analytical and problem-solving skills, quick thinking, and the ability to organize and coordinate events such as conferences. But though I thoroughly enjoyed my ten years working at the university – four years as a PhD student and six years as a postdoc – I eventually realized it was time to leave academia.'

'There were a number of factors that contributed to my decision. First, universities' assessment criteria are far too black and white. The exaggerated emphasis on publication fails to take quality into account. I've served on selection committees for postdoc candidates in which candidates with twelve A1 publications to their name were wrongfully assumed to be better than candidates with 'only' ten A1 publications. Sometimes committees even neglect to check whether the candidate

I was often told, "Oh, this job isn't right for you. You're overqualified."

was the sole author of those publications or whether they were simply one of ten co-authors. There was a young woman in the psychology department for example who sent an article around to the rest of the department asking, "Hey everyone, this article is done! Who wants to be listed as co-author?" Second, output-focused assessment criteria encourage people to take findings that could be published in a single article and spread them out over multiple articles. This needlessly inflates the amount of research time and government funding needed to support the process of writing, reviewing and rewriting. I had no desire to play a game that basically consists of racking up as many publications as possible to add to your CV, regardless of their quality. I also wanted to be able develop other aspects of myself. I had plenty of other interests outside of research – in fact, the work I'm currently doing grew out of my hobby at the time.'

'Like most PhD students and postdocs, I had little hope of receiving a permanent position at the university. When I left, I still had a two-year contract. I wanted to decide for myself when it was time to leave, rather than suddenly finding myself without a job. Leaving the academic world did feel a bit like failure. People asked me things like, "Couldn't you handle it?" and "Weren't you good enough?" Many of my colleagues at the university couldn't understand that I genuinely wanted to make the transition. It's so tempting to stay safely inside the bubble of academia,

Dr Lobke Aelbrecht (1983)

Linguist

Turned her hobby into her career in 2015 after six years as a postdoc, becoming assistant manager at 5to9

Management and founding music platform Catch#

but if you don't ever consider what's outside of that bubble, if you see leaving as failure, then you'll never get out. Young researchers need to be realistic and to remain open to alternatives in the non-academic world, where other skills are needed. Take the time to figure out what you enjoy doing outside of academia. In the process, you'll develop skills and build a network that might help you find a job later. Universities need to make sure that PhD students and postdocs are aware that there might not be a position available for them when they're done. I was happy that mentors were available towards the end of my postdoc, though mine lacked experience outside the university. Young researchers would greatly benefit from the support of mentors with relevant experience in the non-academic world.'

'While working on my postdoc, I also played in a band – without much success, unfortunately. When I realized that I was better at booking gigs than a professional musician friend of mine, I took over booking for him, and later wound up doing the same for several other bands. I enjoyed it so much that I eventually opened my own booking agency. This was what triggered me to apply for a job in the music industry when I left the university. The fact that I hold a PhD actually worked against me during my job search. I was often told, "Oh, this job isn't right for you. You're overqualified." They were worried that I'd only stick around for a short while before running back to the university. When I began working for my current employer, he told me that I needed to understand that we're a small company and that I shouldn't expect the kinds of support services that I'd been accustomed to at the university. He had this idea that we academics are all spoiled when it comes to organizational matters, which may be true in some cases, but certainly wasn't in mine. It wasn't a nice thing to hear.'

'My previous employer recently contacted me about a tenure-track position opening up in Ghent for Professor of Dutch Linguistics and asked if I was interested in applying. I decided not to, because my passion lies in the cultural sector. There's a concert venue where I once met a programme director who inspired me to work in the cultural sector. My goal is to become programme director there myself.'

Josho Brouwers

'I was chosen, along with six others, out of 140 potential candidates for a PhD research position. This kind of intense competition is typical for the humanities. There are still far more PhD graduates than jobs, which is pretty disheartening for those of us who are unable to continue working in our field. Universities need to make people aware of just how limited the career prospects are in the academic world, and offer alternatives.'

'Toward the end of my PhD programme, I became depressed and unsure of what to do. I had begun my PhD with the intention of going on to do academic research, but once I had finished, a lack of funding meant I was unable to stay in the department. When my contract was almost up, a colleague said to me, "If you had wanted to find work, you shouldn't have studied archaeology." The university careers advisor wasn't sure what to do with me, either: "Archaeology? I don't know anything about that, so I can't tell you what you should do. Here are some brochures. Good luck!" As employers, universities should really focus more on helping their employees to develop themselves.'

When my contract was almost up, a colleague said to me, "If you had wanted to find work, you shouldn't have studied archaeology."

Dr Josho Brouwers (1980)

Archaeologist

Editor for Ancient Warfare Magazine since 2012

'My contract came to an end and I needed to find some way to pay my rent. My father passed away when I was nine and I didn't have any other family members to fall back on. So I applied for, and received, a Rubicon grant from the Netherlands Organisation for Scientific Research (NWO), which allowed me to conduct postdoctoral research at the University of Thessaly in Greece. I guess I've always had a survivor's mentality – I was constantly on the lookout for ways to earn enough money to make ends meet.'

'After holding a couple of temporary jobs, I took a friend's advice and got in touch with a recruitment agency, who reacted with enthusiasm: "PhD, postdoc, tons of experience, intelligent. You'll do great in the corporate world!" They found me a job at an advertising agency in Ermelo almost immediately. Having a PhD is a sign of ingenuity, intelligence and perseverance; qualities that are useful in nearly any profession. My advice to PhDs would be to go to a recruitment agency and ask them what they think you'd be good at.'

'I really enjoy my current job as an editor with a small publishing company. I might want to get back into research eventually, but for the time being, I'm keeping busy with my editing work and am also working on my third book, which is based on my postdoctoral research.'

Marie-Louise Damen

'After being invited to apply for a PhD position, I decided to expand upon the research I'd done for my Master's thesis and write my dissertation on the subject of arts education in secondary schools here in the Netherlands. I enjoyed doing research, so this felt like the next logical step for me to take. After four years as a PhD student, my paid position came to an end and I had to combine working on my dissertation with paid jobs as a lecturer and project manager at Cultuurnetwerk Nederland. Once the initial data collection phase was over, the rest of the PhD process was a pretty lonely affair. All told, it took me ten years to earn my PhD. After that, I spent four years as a postdoc. My contract and that of my husband came to an end at roughly the same time, so we decided it would be fun to move abroad for a while. So in 2014, we both started applying for jobs outside the Netherlands. My husband found a job first, as a postdoc in Norway.'

During my university years, I could never have imagined that having a PhD would actually decrease my chances of finding a job

'For me, learning Norwegian was the biggest job-related challenge. It was difficult to find a job at my level. I applied for a number of postdoc positions, but the Norwegian universities all took ages to respond to my applications. If it had taken much longer to find work, I might have resorted to getting a job in a coffeehouse somewhere, just to help me learn the language more quickly. Since I have a background in arts education, I applied to quite a few museums, for posts such as education officer. In my applications, I glossed over the fact that I had a PhD or left it off my CV entirely, because I was worried they would think I was overqualified or that I was just looking for a "token job" and wouldn't take it seriously. I was also concerned that they might think my application was fake, that I was just applying in order to remain eligible for unemployment benefits. During my university years, I could never have imagined that having a PhD would actually decrease my chances of finding a job.'

'I think that many people in the corporate world worry that PhDs will be too meticulous or too academic. In my case, this fear is actually somewhat justified – I tend to overanalyse things. In the academic world, we learn to examine everything from as many angles as possible. But outside of academia, projects tend to move much more quickly, so there's only time to consider one or two perspectives. When the Minister of Education has a question for me, I can't take two years to answer; I'm lucky to get a month. I have to be able to switch gears and solve problems quickly, and be satisfied with answers that may not be 100% watertight.'

Dr Marie-Louise Damen (1974)

Sociologist

Senior advisor at NOKUT, the Norwegian Agency for Quality Assurance in Education, since 2014

'PhDs develop all sorts of skills that are highly applicable in the private sector: they have to be clever and creative in order to come up with new ideas, and they learn how to analyse data and write well in order to publish. PhDs also have to do a lot of networking in order to compile data or to make use of other researchers' data. Those who aren't as good at these things often compensate with self-confidence and a big mouth. Of course, you don't get to be a professor if you're not excellent in your field, but when two researchers are equal in terms of research and writing skills, the one who sells themselves best will win.'

'The skills I gained at university have proven hugely beneficial, particularly when it comes to project management and writing brief reports for government bodies. Universities should encourage their PhD students and postdocs to do more of those kind of things. There are plenty of research projects from the third flow of funds that could be led by young researchers, provided they have a coach supporting them and a number of student assistants working under them. The PhD student or postdoc would take on the role of project manager.'

'Another thing that's helped me to find jobs in both the academic and non-academic worlds has been my experience teaching at university. Unfortunately, I never earned my Basic Teaching Qualification (BKO). Universities should offer PhD students and postdocs the opportunity to quickly become certified to teach. I also believe that universities should provide young researchers with extra guidance when it comes to communication. We don't all need to become communications specialists, but skills like being able to tell your story and get your message across are useful in every field.'

'Looking back, my career path hasn't exactly been linear and I haven't always made the best choices – trying to do so many jobs at once made everything take longer than necessary. But on the other hand, I don't regret the path I've taken because it's brought me to where I am today. I don't aspire to take over my boss's job because he doesn't actually get to do anything hands-on, but spends all his time directing other people. I prefer to be the one solving the puzzles.'

Samula Mescher

'After graduation, I got a job as a junior consultant at KPMG. While this might seem like the holy grail for many business administrators, I found that I actually preferred working on internal organization projects to working with external clients. I also wanted to work fewer hours so that I had more time and energy to devote to my family, friends and hobbies. Many of my colleagues in their thirties told me that they wanted to start families, but had no idea how to combine children with a demanding career. At the time, working anything less than full-time was considered "not done". In the end, I realized that while this might be everyone's idea of the ultimate dream job within my field of study, it wasn't my dream job.'

'After three and a half years at KPMG, I got a job as a public policy advisor for safety and management with the City of Veenendaal. However, I left after only a year because they expected me to be available 24/7, apart from holidays. I then started working as a junior lecturer at Radboud University in Nijmegen, where I was granted time to work on research, educational development and coaching. One thing I missed while working at the university were performance reviews, which can be such useful tools for discussing what's going well and what's not and defining your career ambitions. They also provide employers with a means of dismissing poorly performing employees if a formal improvement plan proves unsuccessful. I got the impression that all those temporary contracts at the university were the result of the university's fear of being unable to get rid of badly functioning employees. If you use these kinds of HR tools wisely, they don't have to be problematic. I loved working at the university and wanted to stay, but I was going to have to earn a PhD. I hadn't enjoyed writing my thesis and wasn't sure I wanted to spend four years doing something like that all over again. Ultimately, I did choose to enrol in the PhD programme, but I gave myself permission to stop if I realized it wasn't right for me. And if it turned out that I wasn't cut out for PhD research, then I believed that meant I didn't belong at the university.'

'I finished my dissertation within the allotted time frame, which was ultimately five and a half years since I went on maternity leave twice and only worked part-time. The final year of my PhD programme really took a toll on me. All I did was work and sleep; I had absolutely no time or energy for anything else. I didn't want to have anything to do with research for a while.'

'Once you've submitted your dissertation, it takes several months before you can defend. During that time, I accepted a position as a university lecturer despite having major doubts. To begin with, I hadn't yet recovered from the incredible exhaustion I felt while finishing up my dissertation. I also began to seriously question whether I still belonged at the university: what did my work and my research really contribute to the field? The words I wrote were read by a small group of colleagues, but what was their real-world value? But before leaving the university, I wanted to make absolutely

Dr Samula Mescher (1974)

Business theorist

Worked as a consultant, civil servant and lecturer prior to earning her PhD.

In 2016 she started her own career-coaching business: SamulaMescher.nl

sure that that was what I wanted, because once you leave academia, it's very hard to come back. I hoped to find fulfilment in teaching, but with the increasing demands placed on educators today, I didn't feel like I was really making a difference. If you only have 10 minutes per student to discuss an assignment, there's simply not enough time to help them understand concepts fully. All you can do is tell them, "This is wrong, that is wrong, this needs to be changed." It was draining. After only six weeks, I knew that it was time to leave the university.'

'Initially, my plan was to keep working while looking around for a new job. But I was under too much pressure: getting my dissertation ready for publication, designing and teaching new courses, and dealing with an extra-heavy teaching load. There was no chance for me to slow down or recharge my batteries after that intense final year of my PhD programme, and I wound up running on sheer willpower for far too long. As a result, I became burnt out and I left the university due to illness. It took me a year and a half to recover fully, during which time I also suffered a great deal of back pain and had two bouts of pneumonia. When I was finally ready to look for a new job, I discovered that simply sending a letter of motivation and a copy of my CV didn't get me as many interview invitations as it had in the past. This was most likely due to the fact that I now had an unusual CV, and perhaps also to the misconception that former academics are too theoretical and have poor communication skills. Working at the university, I had certainly come across highly intelligent, socially awkward people without practical work experience who fit that stereotype. But I didn't see myself that way; I had plenty of experience working outside university. It's also important to note that analysing how an organization functions is very different from actually working there, which is why I sometimes call it "the wonderful world of academia". It's a kind of bubble from which you can observe – and make all sorts of pronouncements about – the outside world. But at the same time, it separates you from the subject of your observations. Academics don't get to experience life outside the bubble, especially those who spend their time conducting experiments in a laboratory or who are primarily engaged in quantitative research. To me, academics are basically a bunch of solo entrepreneurs who are all afraid that someone else will

steal their ideas and publish them first. While working at the university I never really experienced a sense of belonging to a group, whereas in the business world, there's a much greater emphasis on working together to achieve your organization's goals.'

'When I left the university, I was certain that the work I'd done there would prove irrelevant in the outside world. But so many of the skills I developed while working in academia turned out to be useful in other contexts. All those analyses and interviews I had conducted helped me to become good at recognizing underlying arguments, processing large amounts of information quickly and making connections. When interviewing for jobs, PhDs shouldn't just say, "I conducted lots of interviews" since interviewers may respond, "What good is that to us? We don't need you to conduct any interviews." They're better off saying something like, "I have extensive experience in leading discussions, allowing me to get straight to the heart of matters." They need to speak the language of the outside world. An excellent training exercise for young researchers would be to ask them, "Which skills are necessary to conduct your research and how can you transfer these skills to meet organizations' needs?" The exercise should also feature perspectives from the corporate world and should be led by someone with practical experience.'

‘

When I left the university, I was certain that the irrelevant in the outside world. But so many of th in academia turned out to be useful in other cont

WHICH GRASS IS GREENER?

'At a certain point during my job search, I had been rejected so many times that I just felt completely drained. I decided to nurture myself by doing things I enjoyed: theatre, sport, and a course on leading creative brainstorming sessions. This helped me to recharge my batteries. I also decided to start networking, even though I'd never really been good at making small talk; it always felt too slick and salesy. I began by attending a local networking event, where I spent the first 30 minutes standing around thinking, "What am I doing here?" But then I got introduced to a few people and started chatting with them about their experiences working in the public sector, purely out of interest, not because I wanted anything from them. I quickly realized that I'm actually quite good at networking and that I really enjoy it. More than 60% of jobs are landed through networking, so it's important for young researchers to build up a professional network, whether by sharing parts of their research or by simply asking organizations if they can visit to see how things are done in practice. Thanks to my own network, I found a job as a senior HR advisor for the City of Ede.'

'My previous work experience and the fact that I have a PhD tend to make people see me as rational and analytical, but I believe that my knack for conducting interviews was due to my ability to empathize with and relate to my interviewees. As a career coach, I draw on both my analytical skills and my intuition.'

work I'd done there would prove
ne skills I developed while working
texts

Kilian Bennebroek Gravenhorst

'I began my PhD in 1997 with the intention of staying on at the university afterwards – at the time, there were still plenty of academic jobs available. I saw it as an investment in my future and a way of distinguishing myself from other organizational consultants. I love puzzles, other people see a complex problem and think: "Oh no, it's too complicated!", but I think, "Hooray, it's nice and complicated!" I also really enjoy working independently – the first sentence my grandmother remembers me saying was: "Me do it!"'

If you're a public administration specialist, then it ma attend an actual city council meeting and observe w "in the wild", so to speak

'I was completely dedicated to my PhD, which meant I wasn't exactly the best partner at the time. At home, my partner would remind me, "Hey, I'm still here!" In terms of my own personal development, doing a PhD turned out to be a great investment. PhDs learn to write, persevere, lead themselves, think abstractly, ask the right questions, and examine things from multiple perspectives. The fact that PhDs tend not to provide quick, easy solutions and aren't afraid to speak their minds can be seen as a weakness by some organizations, but I see it as a strength. If I only tell my clients what they want to hear, then I'm not adding anything of value or providing them with any new insights. Ultimately, the reason clients approach me is because I know things that they don't. And when organizations aim to solve problems quickly, they seldom penetrate to the heart of the matter. With their self-assurance and ability to function independently, PhDs would be an asset to virtually every organization.'

'After completing my PhD, I taught at the University of Amsterdam for ten years. Upon hearing about my experiences, students would ask, "Is that really what it's like in the business world?" While working at the university, I was often surprised by this gap between theory and practice. For example, if you're a public administration specialist, then it makes sense to attend an actual city council meeting and observe what things are like "in the wild", so to speak. My field, organizational science, also pertains to the world outside of academia. At a certain point, I realized that as long as I stayed at the university, I would be limited to researching, theorizing and writing

**Dr Kilian Bennebroek Gravenhorst
(1968)**

*Organizational scientist specializing in
change management*

**Founder of networking organization
PlusPulse, writer and lecturer at Sioo**

akes sense to
hat things are like

,

reports that organizations would never implement. I decided to leave the university
and become an organizational consultant.'

'While certain clients, such as educational institutions, might be impressed by my
title, others – housing associations, for instance – couldn't care less that I have a PhD.
Even so, the skills I gained during my PhD programme have had a positive impact on
the way I work. Earning my PhD turned out to be an excellent investment in myself
and has helped me to enjoy my work to the fullest. I feel confident in saying that
since I started my PhD programme, I've had some of the nicest jobs in the world!'

Marein de Jong

'After receiving my pre-university diploma, I spent four years in America earning my Bachelor's degree while competing on the university swim team. I then returned to the Netherlands for my Master's in Biomedical Sciences, during which time I also did an internship on HIV research in New York. After graduating cum laude, I found work as a research analyst at Vrije Universiteit Amsterdam. Six months into the job, I realized that it wasn't for me and that I needed to get my PhD so that I could find work that would allow me more autonomy and would be more intellectually challenging. Luckily, my supervisor offered me this opportunity.'

'I successfully completed my PhD within four years and had the luxury of choosing between two postdoc positions. I chose the position that offered me the greatest degree of freedom, but it turned out to be a disappointment. It consisted primarily of individual lab work on a subject that was completely new to me. What I actually wanted was a job in which I could devise new concepts and projects, something

Instead of focusing solely on their acquired knowled need to start identifying and emphasizing their skills

more along the lines of a group leader. I tried to find out how long it would take to work my way up to a position like that, as well as which steps I needed to take, but I couldn't get any clear answers from my supervisor or the university.'

'While I was very good at conducting research and had a promising career ahead of me, I just didn't feel a sense of fulfilment. The prospect of spending the next five years struggling to get out of the laboratory before making group leader made me stop and ask myself a question that I believe all young researchers should ask themselves: "Is this truly the kind of work I want to be doing?" For me, the answer was "no", so I decided to relinquish my two-year research grant.'

'At the time (in 2012), admitting I was considering leaving the university felt taboo. I've noticed that many PhD students are afraid to bring it up, perhaps because they're worried that their supervisors will then put less effort into helping them. Students are dependent on their supervisors' support to complete their PhDs, so that's a risk they can't take. But 80% of PhDs ultimately leave academia, so I wish it weren't such a big deal and that supervisors would ask students in their final year (or earlier), "How can we help you prepare to enter the non-academic world?"'

'At the same time, I've also noticed that many young researchers lack definite career plans and tend to take a reactive approach. When their contracts end, they think, "I'll stay on for another two years as a postdoc. Oh wait, there's no more funding;

Dr Marein de Jong (1980)

Biomedical scientist

**Policy officer and research manager
at Aidsfonds - Soa Aids Nederland
since 2012**

lge, young researchers
s early on in their careers

what should I do now? Hmm, here's a job opening for a lecturer at another school; I guess I'll go do that." By getting in touch with old acquaintances, PhD students and postdocs can discover what kinds of jobs are actually out there. Instead of focusing solely on their acquired knowledge, young researchers need to start identifying and emphasizing their skills early on in order to prepare themselves for their careers, whether within or outside of academia.'

'At the university, I was responsible for making my own presentations, planning my own appointments and printing my own letters. Outside the university, I was told that I should leave these things to the programme assistant: "We don't want you to spend time on that kind of thing; we want you to go think and be creative. After all, that's what you're good at." It was such a relief. I feel valued and connected with others in my current job, and I also have job security, which is important now that I'm a mother. I do miss certain aspects of being a researcher, such as the adrenaline rush – reminiscent of my competitive sport days – that I'd get when one of my concepts proved successful, as well as the recognition I received for publishing in prestigious journals. Even so, I wouldn't want to go back to doing research. I prefer my current work and enjoy interacting with my colleagues. Working at an NGO like this one has opened my eyes to the issues facing many groups in our society. It's had a tremendously positive impact on my life.'

Paul Koenen

'I started working on my PhD when I was 22. The idea was that I would still be young enough when I finished to decide what I wanted to do afterward. The PhD programme was more difficult than I had expected, my data and results were disappointing, and one of my supervisors suffered a burn-out and was gone for 18 months. Because everything took longer than planned, my funding ran out and I was only getting paid 60% of my salary. I remember thinking, "What have I got myself into?"'

'Despite the fact that I already knew I wanted to leave academia, I accepted a postdoc position at an Australian university after earning my PhD because I wanted to experience living abroad. While working there, I saw that the successful researchers

My academic background may have made me a subj[...] when it came to the business side of things, I often f[...]

were the ones who devoted every fibre of their being to a single, highly specific subject. They weren't very sociable and didn't seem to crave interaction with others. Everyone was off in their own world, wrapped up in their own research. I realized that in my case, locking myself away in a laboratory for an entire year would make me miserable. I decided to look for work that made me feel energized; something social, fast-paced and dynamic that would also pay decently.'

'While I was still in Australia, I started spending half a day each week on projects for the university's business development bureau in order to distinguish myself from other postdocs and to gain commercial experience. I also got in touch with people outside of academia – through LinkedIn, for example – to find out what sorts of jobs were out there. After all, if you're looking to meet people who've left academia, then you won't find them at the university. People working at universities often have no idea what kinds of jobs are available in the outside world. Despite preparing myself for life outside of academia with my internship and my networking efforts, the transition from university laboratory researcher to consultant at PwC was more challenging than I'd expected. I had to do an assessment, which asked about all kinds of things that were completely unfamiliar to me. The work was much different than I was used to, as well. I found myself having to manage projects and keep competing egos under control. For the first time in my life, I also had to prepare quotes, which I had no idea how to do. Working in cross-functional teams, in which everyone is expected to have some degree of insight into all business processes, was also a new experience. Deadlines were far less flexible than they had been in the laboratory – I couldn't just tell customers that their projects would be finished later than expected.

Dr Paul Koenen (1978)

Biomedical scientist

Consultant at PwC from 2010-2013 before starting at Novartis Pharmaceuticals, where he has been brand manager for Ophthalmology since 2015

ect matter expert, but
felt like a clueless intern

My academic background may have made me a subject matter expert, but when it came to the business side of things, I often felt like a clueless intern.'

'When I found myself assigned to work as a consultant for a photocopy manufacturer, I suddenly realized that PwC could just as easily have handed the project to some young business administration graduate. I wanted to do something that would utilize my background in the life sciences, so I decided to search for something different. I found a position in the medical department at Novartis Pharmaceuticals. I've since moved into a marketing position, which allows me to combine scientific and commercial work. Being able to understand the mechanisms of action for our drugs is definitely a plus, though I've come to realize that my scientific urge to analyse everything is not useful in the marketing world. However, my scientific background was one of the reasons that my supervisor entrusted me with this position in the first place, because it proves that I'm intelligent and analytical enough for the job.'

'At Novartis, we work with clearly defined annual performance objectives and hold performance reviews every six months. At the university, no one ever explicitly stated what was expected of me. The whole issue of performance was left up in the air, rather amateurishly. There's definitely room for improvement there. I also think it's wrong for universities to allow so many more people to earn a PhD than there are jobs available.'

'I have less freedom in the corporate world than I did in academia, but in return, I get to work together with my colleagues toward a common goal, which is ideal for me. I really love my current job and the wide variety of responsibilities it entails; I guess I'm more of a generalist than a specialist.'

Selma Wiertsema

'While working on my Master's in Medical Biology at Utrecht University, I never really stopped to consider what I wanted to do after graduation. So when I was offered a PhD position at the Wilhelmina Children's Hospital, I accepted. I already knew I enjoyed doing research, and many of my fellow students were also planning on doing a PhD. At university, no one ever really explained what other options were out there. During the course of my PhD programme, I conducted research at the University of Western Australia. Afterwards, I took up a postdoc position there, working with a multidisciplinary team to understand chronic infections in children.' 'After six years in Australia, my partner and I decided that we wanted to return to the Netherlands, even though my contract hadn't yet come to an end. I was intrigued

Rather than saying, "I discovered a cool new molecu[le]... say, "Our current project is highly relevant to your pr[oduct]

by the possibility of working in the private sector, but I was also concerned that if I made the switch, I wouldn't be able to return to academia. A former colleague pointed me towards Crucell in Leiden, where they were setting up a new R&D department. I wound up working there happily for three years, until I spotted a job vacancy at Nutricia Research.'

'I already had experience working with the pharmaceutical industry from my time as a postdoc, but even so, the transition to working in the corporate world presented lots of new challenges – it was a steep learning curve. We were working on vaccines, an area in which research is expected to yield tangible results, from both a scientific and commercial perspective. For me, the commercial perspective was a completely new way of looking at research. I learned to bridge the gap between theory (scientific data) and practice (products), a role that I continue to play in my new position as senior team leader. I explain to the people on the business side of things why the work that happens in the laboratory is so vital, and I teach the people in the lab to present their stories in a way that appeals to the business folks. Rather than saying, "I discovered a cool new molecule", researchers should say, "Our current project is highly relevant to your product, because..." Otherwise, people in business are likely to think, "Who cares? What's it to me?" because the context and the "so what" are unclear to them.'

'My supervisor views my postdoc experience as an asset, because compared to PhD students, postdocs bear greater responsibility for managing their own group and determining their own path. Postdocs are free to network and write their own grants as they see fit, whereas PhD students know in advance exactly what they'll be working on and how much funding they'll receive. If postdocs take this network-

Dr Selma Wiertsema (1977)

Medical biologist

Worked as a postdoc in Western Australia for six years before becoming senior team leader for Immunology at Nutricia Research in 2015, where she bridges the gap between research and business

le", researchers should
roduct, because…"

oriented approach with them into the private sector, they will be quicker to see opportunities to work together with other departments to set up lucrative projects. One thing I definitely don't miss about being a postdoc is spending half my time writing research proposals and grant applications to justify my work; that was often quite frustrating.'

'Maybe it's different here in the Netherlands, but when I was a postdoc in Australia, I was never worried about losing my job. The head of our department never had to let anyone go; he always managed to find some extra funds somewhere. But at a certain point, I realized that I didn't want to remain dependent on others for the rest of my life.'

'In the corporate world, goals are more formalized due to the use of templates and final assessments. However, working with concrete targets also carries risks: there's a danger that topics that aren't on the target list will be ignored. In that sense, targets can discourage creativity.'

'I wouldn't consider returning to academia; I'm very happy with my current job. Compared to my work as a university researcher, the work I do now is more concrete and more collaborative. My colleagues and I work together toward a common goal, whereas at university I often felt I like was all alone, doing my own thing, completely submerged in my research. In the future, I still have the opportunity to decide whether I want to move more towards the business or the scientific side of things. It's the interface between these two domains that I really enjoy. Scientists can sometimes be a bit unusual or unconventional, but then again, some of the people I work with in the business world are prone to leaping hastily from conclusion to conclusion. When that happens, I think to myself, "Hang on a minute, let's just take a look at the data first."'

Rowin Meijerink

'Of the 23 students who embarked on a Master's degree in Astronomy in my year, only eight successfully completed the programme. After graduation, I was offered a PhD position by one of my professors, which I accepted. I finished my PhD within four years, which was fairly quick; most of my friends were still working on their law degrees at the time. I then applied for jobs in the private sector, as well as fellowships at prestigious universities. I only considered the most high-ranking universities, since they're the only ones that give you a shot at a career in science. Unfortunately, none of the fellowships panned out, because there is simply too much competition for too few places. Luckily, I received an email from a professor at Berkeley who said, "I wasn't at the meeting where they decided who would receive the fellowship, but I've got my own funding. Are you interested in joining us?" Shortly thereafter, I got married and we left for the US, where I spent two years as a postdoc at Berkeley and one at Caltech. During that time, our first child was born. When we found out our second child was on the way, we decided to return to the Netherlands.'

If I could give postdocs one piece of advice, it would be not to remain a postdoc for as long as I did

'In the five years that followed, I held postdoc positions in Leiden, Groningen, and then Leiden again. I wasn't able to advance any further; female candidates were strongly favoured over men because there were so few women working at the Observatory. In order to boost my chances of getting a permanent contract, I applied for grants that would allow me to lead a research group, but I was unsuccessful. One year, the Netherlands Organisation for Scientific Research (NWO) awarded three Vidi grants to researchers in my field. Despite receiving scores of A and A+, my proposal was ripped to shreds, while two women with a similar proposal were invited for an interview. Each new grant application took me a couple of months to prepare, but ultimately, none of them was successful.'

'I was sick and tired of all the politics in astronomy, I wanted work with greater social relevance, and I lacked a sense of connection with my colleagues at university. Since leaving academia, my wife says I've been a lot more cheerful. After doing five postdocs, making the switch turned out to be a bit more complicated than I had imagined. I was 37 at the time, and there was no way McKinsey was going to hire me because I was already far too old. Ernst & Young told me flatly, "You're too old." If I could give postdocs one piece of advice, it would be not to remain a postdoc for as long as I did.'

Dr Rowin Meijerink (1978)

Astronomer

After five postdoc positions, he made the switch to consultancy and began working for SparkOptimus in 2015

Design engineer at ASML since January 2017

'My supervisor at SparkOptimus also studied astronomy and really wanted me on the team because he knew what astronomers can do: how deeply they can dive into an analysis and how they can think about problems abstractly while still maintaining a clear overview. Whether the problem itself is related to astronomy or business doesn't actually matter all that much. My years as a postdoc also gave me a great deal of experience in leading teams, teaching and presenting at conferences in front of 300 people or more. As a consultant, I use clear, simple language to explain to businesses what they need to do, which isn't all that different from teaching students.'

'Despite all this, transitioning into the business world was tough. At my current company, we work 50 hours a week and spend informal time together outside of work. The place is full of people who were all in the same student associations, and everyone is roughly 10 years younger than I am. We recently went on a three-day corporate ski trip, which left me feeling completely wiped out. When I first started working here, I felt awkward and incompetent: I had to go back to basics and learn all kinds of completely new things. I wasn't used to working iteratively, either: everything I put down on paper constantly gets evaluated by others in order to improve the product. But as a scientist, when you've worked carefully on something and it gets completely torn to pieces and branded as worthless, then it's hard not to take that personally. After the first four months or so, I got used to consultancy. But it was pretty intimidating at first. My boss and I agreed that it would probably take me a year to really find my stride here at SparkOptimus. Just like when I first started teaching at the university, I was basically thrown in at the deep end. Their motto is "learning by doing."'

'During the final year of my Master's programme, the university provided us with career counselling. I attended job fairs, where I became acquainted with businesses in my sector. That would have been a good moment to leave the university. Once you've got a PhD, the chances of finding a job in that way are somewhat slimmer, and as a postdoc, it's pretty much a lost cause. The career aptitude tests we were offered were totally worthless, full of ridiculous career suggestions like "baker" and "electrical engineer". But what I did find useful was a training course that helped me to identify what drives me and what I'm good at in a more abstract sense. That helped me to realize that consultancy would be a good fit for me, and it also helped me to write better job applications.'

'I definitely wouldn't consider returning to an academic research position, but after working at SparkOptimus for a year, I've decided that consultancy is a bit too far removed from research for my taste. I was recently offered a job as a design engineer at ASML and will begin in January.'

Frits Rovers

Manager for various employees with PhDs

‘When we hire new lecturers, those who have a PhD are definitely at an advantage. They have demonstrated that they have a strong work ethic, discipline, ambition, the ability to think abstractly, analytical skills and a research-oriented approach to problem solving. They can take on a wide variety of tasks and are capable of providing assistance with policy decisions and administrative matters alongside their teaching duties.’

‘In addition to having a PhD, new lecturers must also have completed a teacher training programme and must have actually taught classes before – we require both theoretical and practical experience. Here at the Amsterdam University of Applied Sciences, there's a feeling that people with a great deal of hands-on work experience must have learned more valuable life lessons than those who have spent their time engaged in research. This view of researchers as less well-rounded and less socially

‘

Personally, I don't identify with the stereotype of the and I don't feel it applies to my lecturers with PhDs,

involved is a common misconception shared by many of my colleagues. It is founded on the myth that lecturers with PhDs are more apt to be "absent-minded professor" types who are lacking in social and didactic skills, and are therefore less skilled at teaching.’

‘Personally, I don't identify with the stereotype of the out-of-touch nerd, and I don't feel it applies to my lecturers with PhDs, either. I see a doctorate as a confirmation of the candidate's skills and ability. Many PhDs feel a strong need to continue developing themselves professionally. Employers must encourage this if they want their employees with doctorates to remain with the organization. They need to offer PhDs opportunities for development, such as granting them research time at a knowledge institute, to ensure they don't get bored.’

Dr Frits Rovers (1958)

Programme coordinator for civics teacher training programmes at the Amsterdam University of Applied Sciences (HvA) since 2010

e out-of-touch nerd,
either

'PhD programmes unfortunately offer too few opportunities for students to become acquainted with the world outside of academia. PhD students must be encouraged to consider not just the social relevance of their research, but also their own place within society. They need to spend time engaging in hands-on work, which for aspiring lecturers means teaching classes, in order to ensure that they have the theoretical and practical experience we require. Universities are unable to offer jobs to roughly 80% of recent PhD graduates, many of whom will then struggle to find work. Universities therefore have a responsibility to impress upon PhD students the importance of gaining practical experience during the course of their studies.'

Maudy Dekker

Employer of PhDs and non-PhDs

‘While earning my Master's degree in Educational Theory at the University of Amsterdam, I did a work placement at the Academic Medical Center (AMC). At first, I considered applying for a PhD position there. People at the AMC – including those in education support – all thought that it was necessary to have a PhD in order to get anywhere within the organization. In addition, one of the people I looked up to there had become a professor at a young age. All this led me to believe that I also needed to pursue a PhD, until I realized that it wasn't at all what I wanted to do. I didn't enjoy doing research or writing a thesis, and I had heard that the chances of finding a job outside of education were better for people who only had a Master's degree.'

PhDs who are able to maintain their "helicopter view" their ideas into practice and communicating them cle be at a significant advantage

‘Instead, I found a job at NCOI. In my current role as specialist programme coordinator, I work together with experts in a wide variety of fields. We expect our lecturers to have one level of qualification above the level at which they teach: those who teach Bachelor's courses must themselves have a Master's degree, and for Master's programmes, we prefer lecturers with a PhD. At the same time, we also want lecturers who have a great deal of practical experience and excellent teaching skills. These requirements sometimes conflict with one another. It's a bit like looking for a needle in a haystack.'

‘In my experience, going to university is like being in a cocoon; when you choose to do a PhD, it takes even longer before you finally emerge from it. And in a sense, staying in that cocoon for longer means missing out on certain things. Commercial skills, persuasive skills and communication skills may be of lesser importance when you're working on a PhD, but they're crucial in the outside world. Doctoral research trains PhDs to think in a highly abstract way, but they also need to be able to bring things down to the level of the rest of the world. PhDs who are able to maintain a "helicopter view" while putting their ideas into practice and communicating them clearly to others will be at a significant advantage.'

‘There are significant differences between PhDs from different fields. For example, the relatively young discipline of sport management emphasizes soft skills and the ability to put ideas into practice, while many other disciplines focus on exploring

Maudy Dekker, MSc (1989)

Specialist programme coordinator at NCOI since 2013

specialist literature. While that may help them to speak eloquently about the various theoretical approaches to research, what I really need lecturers to do is to communicate to their students exactly what is expected of them, and why. I then need to be able to share this information with other lecturers, students and accreditation bodies. Sometimes I wonder: if lecturers aren't able to explain their objectives clearly to others, are they themselves even aware of them?'

w" while putting
early to others will

'PhDs are sometimes viewed as authority figures by their colleagues. If I'm sitting in a meeting with thesis supervisors and two lecturers have a difference of opinion, someone will nearly always point out that the lecturer with the PhD is probably right. I disagree – if only it were that easy to determine a person's ability based on nothing but their background and CV! I've seen so many people with impressive CVs who fail to live up to expectations. Before I hire you, show me what you can do and prove to me that you can deliver quality while meeting your deadlines. I've noticed that PhDs often need a lot of time to think things through and let them sink in; I'll ask them a question and they'll sometimes take three weeks to get back to me. By that time, I won't even remember the question. I'll have long since found another solution because I needed a quick response – not necessarily the best possible answer, but good enough for the time being.'

'At NCOI, we're always looking for people who are at the top of their field. PhDs often have a great deal of knowledge, but the ability to apply this knowledge differs from person to person. Some PhDs are able to put their skills into practice, while others aren't. In a customer-oriented organization like ours, achievements are more important than status. PhDs and non-PhDs alike are judged by what they actually accomplish in their field.'

Eddy Boot

Manager for various employees with PhDs

'When I completed my PhD on the subject of educational development and ICT in 2005, I had already been working at the Netherlands Organization for Applied Scientific Research (TNO) for eight years. During my time as an external PhD candidate, I not only enhanced my academic knowledge, but also developed crucial skills that I still use every day, including writing skills, analytical thinking skills and the ability to structure information. Here at TNO, many people have, or are working on, a PhD. This is reflected in our corporate culture: we use full academic titles on everything, for example, from payslips to expense claims.'

'Government bodies and research organizations tend to be quite impressed by PhDs. Businesses often place more emphasis on the person's standing within their field: are they a key player with significant influence? This can be someone with a PhD, but it doesn't have to be. Businesses often need to employ people of high standing in order to gain access to clients. In those cases, a portion of the work is ultimately carried out by junior employees, in order to cut costs. This is often the case at consultancy firms and law firms, for example.'

If you don't develop a broad range of skills, if all you have is in-depth knowledge, then you may find it hard to compete against fast-talking Masters when applying for jobs

'If you separate PhDs and non-PhDs into two groups, you'll notice that the differences among the individuals within each group are greater than the differences between the two groups as a whole. Here at TNO, people with PhDs and Master's degrees both start out in entry level positions, but because PhDs are usually slightly older and have four years of research experience, they tend to progress faster. Another thing to consider is that being promoted also makes a person more expensive to employ due to rising salary and/or rates. If you've risen through the ranks quickly and your services have therefore become more expensive, you'll have to offer more value to justify the increased costs.'

'People with a doctorate need to be good at selling themselves, particularly when it comes to their crowning glory: the knowledge and skills they gained during their four-year PhD programme. Because their earnings tend to increase so quickly, they need

Dr Eddy Boot (1969)

Research manager at the Netherlands Organization for Applied Scientific Research (TNO)

to differentiate themselves from people with Master's degrees, who entered the job market four years ahead of them. During those four years, those with Master's degrees were able to gain valuable hands-on experience at consultancy firms and engineering firms. And despite often being limited to junior functions, they were at least able to get a head start on developing their networks. I would therefore advise all PhD students to stretch their wings during the course of their studies. Seek out opportunities to gain management experience, supervise students, interact with a wide variety of people at conferences, and start building up a network in your field of expertise. If you don't develop a broad range of skills, if all you have is in-depth knowledge, then you may find it hard to compete against fast-talking Masters when applying for jobs.'

'Compared to universities, other organizations such as research institutes, government bodies and businesses often have a different work dynamic and are more fast-paced. Of course, this depends on the organization. But in many cases, particularly in customer-facing jobs, you'll be on the road more often, your schedule will be overflowing and your workday will largely be determined by external factors such as the needs of your clients, colleagues, etc. You'll also need to interact very differently with those around you: your manager, the colleagues to whom you delegate tasks, staff members requiring your support, clients, stakeholders, etc. This can all become rather chaotic, resulting in a highly fragmented schedule. Taken together, these factors can make the transition into the non-academic world quite challenging at times.'

'I can imagine that after spending four years researching within their own niche, some PhDs might develop a kind of tunnel vision, causing them to lose sight of the big picture. This can lead to "experience concentration", in which a person's expertise is limited to their own research topic and they have trouble operating outside of their own particular niche. When this happens, it's difficult to find a job at a non-academic research organization.'

'Candidates' academic disciplines also play a role in the hiring process. It's always difficult to find qualified candidates in the hard sciences for specializations such as radar technology, cybersecurity and econometrics. Even during the financial crisis, when TNO as a whole wasn't taking on as many people, we still continued actively recruiting in those areas. But if I were to post a job opening for, say, a social psychologist, I would receive many more applications, which means that candidates' soft skills would play a much greater role.'

Conclusions

These portraits clearly demonstrate that the grass outside of academia can be just as green as that on the inside. For PhDs, whose unique skills allow them to make substantial contributions to their organizations, there is engaging and challenging work to be found in both academic and non-academic settings. It is interesting to note that while academics tend to prefer work that offers them autonomy and is intellectually stimulating, PhDs working in non-academic fields place a higher priority on work that has practical and social significance, as well as on connection and cooperation.

Competencies

Many of the skills that are necessary for a successful academic career – strong intellectual and analytical ability, for instance – are also of great value in the world outside of academia. PhDs working in non-academic settings distinguish themselves from their colleagues by means of their analytical skills, abstract reasoning abilities, critical attitudes, depth of thought, and dedication to accuracy. In addition, employees with PhDs often display a high degree of personal effectiveness, which represents a significant advantage. Some employers noted that these strengths can turn to weaknesses when taken too far, such as when PhDs are overly precise or spend too much time on reflection, as work outside of academia calls for quick thinking and decisiveness. The *Transferable Tree* provides an overview of the transferable skills that were mentioned in the 39 interviews from which these portraits were selected.

Despite their many positive characteristics, PhDs' social and commercial skills can be a point of concern. Academics spend far more time working alone than their non-academic counterparts, which can prevent them from fully developing certain competencies. For instance, PhDs tend to be somewhat weaker when it comes to political and administrative sensitivity, the ability to see things from the customer's perspective, the ability to translate subject-matter expertise into a product or service that meets customers' needs, and the ability to make decisions quickly and on short notice.

Recommendations

We can conclude from our study that while a gap certainly exists between academia and 'the corporate world', it is not as vast as is commonly believed. How can we begin to bridge this gap? The first step is to identify and facilitate discussion about the gap itself. This publication represents a first step in that direction. Nearly all the portraits presented here also include valuable recommendations, particularly for young researchers. Our interviewees had the following advice for PhD students:
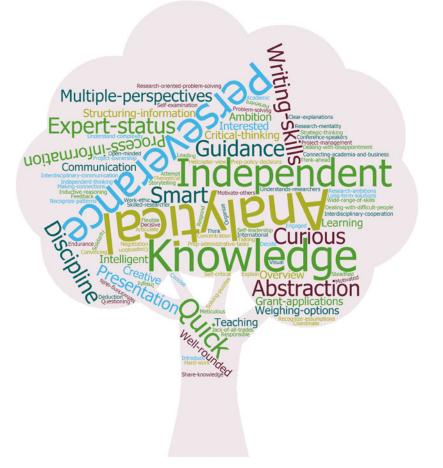
- Develop a broad range of skills during the course of your studies: seek out new activities and responsibilities during your PhD programme and be sure to integrate your research into practice.
- Learn to see your PhD as proof of your skills and ability. Describe your experiences in terms of the useful skills you have gained, focusing on your strengths and on what you enjoy doing, not just on your specialist knowledge.
- Begin building up a relevant professional network during your studies and use your connections to explore career opportunities outside of academia.

- Consider whether pursuing a PhD is really the best choice for you. If it isn't, then you're better off choosing a different path.

The portraits also contain recommendations for universities (in their roles as employers):

- Integrate a broader social focus into PhD programmes from the earliest stages, for example by organizing visits to companies working in relevant fields or by offering joint research projects in which PhD students work together with business and industry.
- Invest in your employees, helping them to develop a broader range of skills. At present, there is still too great an emphasis on intellectual ability and academic achievement and too little support for the development of transferable social and commercial skills.
- Put PhD students in touch with PhDs who have made successful careers for themselves outside of academia.

Non-academic employers who hire employees with PhDs are strongly advised to provide them with a coach who can show them the ropes and can guide them in developing skills that may be relatively new to them.

Transferable Tree: an overview of the relative frequency of skills developed at university that were identified by study participants as being useful outside of academia.