

POLYKUM

IN BETWEEN

ZWISCHEN A UND B

Unsere Zeit im Zug

MULLIGATAWNY SOUP

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EDITORIAL

In Between Space, Time, Music, and Biochemistry

The topic of this issue, "In Between", not only perfectly describes the crisp weather marking our transition from summer to winter, but also the state of the Redaktionsleitung. Lisa, our new president, took over in time for the turbulent "Beginning" issue, and has been delightedly figuring out the psychology and physiology of the organism Polykum since then. Also new is Léona – another biochemist with a linguistic inclination.

Both Léona and Lisa grew up in between multiple countries and multiple languages: German, English, French, Russian, Spanish, Italian, and sweet, abstruse, poetic Swiss German. Continuing the theme, in this issue, we invite you to grapple with in-between-ness. Léona informs you about the historical and cultural in-betweens of Alsace. Leif muses about chemistry in between sciences, and the resulting impossibility of chemistry Wunderkinder. And Lisa invites you to enjoy opera, in between centuries, politics, entertainment, and high art.

We hope that you find some time between your classes, your social schedule, and that often-neglected occupation – sleep – to enjoy the thoughts and ideas in between these cover pages!

Lisa, Léona, Sabrina

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and Sabrina Strub
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Das Polykum ist ein Magazin des

vseth Verband der
Studierenden
an der ETH

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PRÄSIKOLUMNE

Settling in



Dear Readers,

After spending September and October learning the ropes of my new position, November is the first month where I feel like I know (most of) what's going on. My inbox is still as full as it was at the beginning of the semester, but now I know what 90% of the emails are about, and who most of the people who sent them are. But don't worry, I am yet to have a dull day. Given how busy my calendar is, I expect to know what is going to happen when I get to CAB, but every day is filled with surprises.

This month, I would like to take a few moments to talk about PAKETH, the reform of the academic calendar at ETH. It aims to free up some time in the summer, so students can work on personal projects, do internships or simply take a well-deserved break! As VSETH, we are involved in many parts of the project, making sure that the students' point of view is considered in every decision that is made.

With the fondue season approaching, we have enjoyed the last few events not centred around cheese such as HerbstBeerience, FLiK's Hütte, Activity Fair and many more. Don't worry, for those who don't like cheese, there is also mulled wine to look forward to!

Preparations for Nik's Hütte are almost complete and I can't wait to see some of you there from 27 November onwards. If you haven't heard of Nik's Hütte yet, it's a temporary mulled wine bar that VSETH runs on the Höggerberg together with the student associations for 3 weeks every winter.

VSETH doesn't stop on Saturday and Sunday either. The last few months have been filled with various weekend camps. Be it the HoPo weekend (also known as FRUKDuK), the Projekti weekend, or the VSS delegates' meeting. All were filled with interesting discussions, fun games and lots of mate. If you're interested in the outcomes of any of these weekends, don't hesitate to stop by E23! If you missed the weekends and want to join us on one, keep your eyes peeled for the first iteration of the VSETH Actives Weekend, which will take place next semester!

All the best and see you around!
Julia

HOPO-KOLUMNE

A Teaching Assistant Salary Adjustment is coming 2024!

As of February 2024 the salary of student teaching assistants will be increased for the first time in over a decade

In 2022, Europe, including Switzerland, experienced a rise in the inflation rate. The increased prices of essential goods like food, energy, and housing had a significant impact on many Swiss residents, particularly on those with lower incomes. To compensate for the inflation, the ETH Board – the governing body of the ETH Domain (including the ETH Zürich, EPFL and the four research institutes PSI, WSL, Empa, Eawag) – had announced that ETH employees will receive a 2.5 percent cost-of-living adjustment for 2023. Sadly, this decision left out the ETH doctoral students and us students at ETH, since the salaries for teaching assistants (TAs) and doctoral students are paid in a fixed flat-rate salary.

On the 1st of March 2023, the ETH Zürich Executive Board (the highest body in ETH Zürich) decided to increase the salaries of the doctoral students as well, by 2.5 percent, leaving only us students without any compensation for the growing inflation. This is when we, as VSETH Board Members for University Politics, reached out to the Rectorate. We had the feeling, that various groups at ETH were compensated for the inflation but us students, who probably struggled the most with the higher prices, were forgotten in the salary adjustments.

We then had meetings with the Rectorate, where we were able to explain our position and could clarify a lot of questions regarding this topic, such as when the last time was that the TA hourly wage was increased and if extra social security taxes would apply with a higher salary. It turned out, that the last salary increases for student TAs occurred in 2013 and that there would be no need to pay extra taxes. After a lot of very constructive discussions with the Rectorate, we decided together to ask the ETH Executive Board for an increase of the hourly wage of teaching assistants at ETH from 28 francs to 30.70 francs (gross salary), which is the salary that was already being paid at the computer science department. The ETH Executive Board then had their first discussions about this topic in their board meeting in June, and later in September formally decided to increase the wage to 30.70 francs per hour as of February 2024!

Hence, from next spring semester onwards, we will have higher wages for student teaching assistants at ETH! We as VSETH Board are super happy that this worked out, and that we are able to share these great news with you now!

Also, we would like to thank the Rector and the Rector's staff for their commitment to work collectively on the salary adjustments of the teaching assistants.

We hope you are as delighted about these news as we are, and that you found this little insight into ETH University Politics interesting.

As of the 19th of September, there is a newly elected VSETH Board there to represent your student interests towards the ETH. So if you have any issues do not hesitate to write an e-mail to hopo@vseth.ethz.ch to reach the new University Politics Board Members or to vorstand@vseth.ethz.ch to contact the VSETH Board. We are most grateful, that we were allowed to serve you in the past year and also very delighted to see that the new board is already doing great work!

All the best from the former VSETH Board

Jasper Boulwood, 23,

Physics MSc, was a VSETH Board Member for University Politics last year and is now desperately trying to find free study spaces, now that the VSETH bureau is not available anymore.

PEOPLE OF ETHZ

WHAT DOES YOUR WORK-LIFE BALANCE LOOK LIKE?

Anyone who's gone to ETH is familiar with endless to-do lists, limited sleeping hours, and that eternal quest for some sense of work-work-tiny bit of life balance. We've asked four ETH students for their thoughts — philosophical and practical by *Gaurav Singh* and *Lisa Likhacheva*

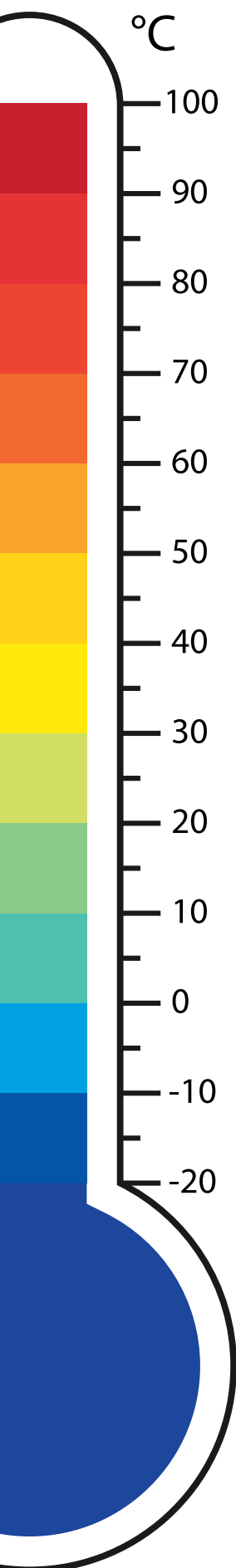
I've come to recognize that achieving a work-life balance in a demanding academic setting is quite a challenge. The aspiration for academic excellence can sometimes overshadow the significance of personal well-being. I've encountered external pressures – the constant drive to be productive and the paradoxically counterproductive, self-perpetuating guilt that creeps in when you don't complete your work. While I value the motivation that a rigorous environment fosters, I also see its inherent limitations. Sometimes you need to break from the well-oiled, efficient routines to reacquire a sense of time and purpose.

Simultaneously, I believe that work should not be viewed as a necessary evil but as a constructive addition to life, contrary to what the phrase "work-life balance" could suggest. Ideally, work should contribute to our personal growth and passions, and give a sense of purpose. In a society based on collective performance, trying to balance these aspects remains a challenge, and it's a topic that deserves more attention and an open, honest discussion, particularly in environments where it remains somewhat taboo.

**YOEL ZIMMERMANN,
BSC INTERDISCIPLINARY SCIENCE
(CURRENTLY AT HARVARD)**

Work-life Balance ist für mich extrem wichtig, da ich zwar sehr gerne studiere, jedoch auch eine sehr kreative Seite habe, die ich in meiner Freizeit gerne auslebe. Ich denke, work-life Balance ist etwas sehr Individuelles. Das muss jeder für sich selber spüren, was ihm oder ihr guttut. Einige können gar nicht arbeiten und dabei das Gefühl haben, ihre Zeit erfüllt zu verbringen, während andere eine Struktur brauchen. Ich glaube, tendenziell arbeiten wir jedoch eher zu viel als zu wenig, wobei dann irgendwann einfach auch die Produktivität leidet. Ab und zu soll man auch einfach nur dürfen, und nicht müssen.

AURORA



Basisprüfungsstress? What stress?!

The whole year round I've had quite a lot of time. There was this one subject that took up most of my time, but otherwise it really was fine. Studying for the exams wasn't too stressful either, and didn't even take me particularly long. I was able to make a solid plan and follow it. In general, the first year was quite easy for me, because I had already learned much of the material at my Gymnasium in Winterthur, where I specialized in physics and mathematics.

I think I have a very good life-study balance. I usually watch lecture recordings – also at much higher speed – instead of actually going to lectures. So, I end up with a lot more time on my hands. In general, I work quite efficiently. I feel like I don't need as much time for the exercises as other people. So, I can socialize and do sports. I am also very active as co-president of our student association and have many other projects on the side.

I guess how much time you spend studying correlates a bit with your study program. For something like Interdisciplinary Sciences, you probably need a lot more time on average. But how quickly you learn, how much time you need to memorize things is also very important.

DAAN, BSC IN ENVIRONMENTAL SCIENCES

Wie sieht meine work-life balance aus?

Den „work“-Teil macht im Moment meine Masterarbeit im Kleele Lab und eine Teilzeitanstellung als Assistentin für zwei Fächer der Mediziner im ersten Bachelorjahr aus. Diese Kombination ist nur möglich, da die Professorin Verständnis für meinen Teilzeitjob gezeigt hat. Lesson no. 1, also: Suche nach guten Mentoren, welche den work-Teil einfacher machen.

Life findet nicht nur an den Wochenenden statt, obwohl es mir manchmal so vorkommt. Um diesen Sentiments zu entkommen, suche ich nach Dingen, die meine social Batteries immer wieder auffüllen. Bei mir fangen viele Verpflichtungen mit „life“ an und werden zu „work“. Dann muss ich mich erstmals wieder erinnern, wieso sie mich überhaupt erst begeistert haben. Ich habe manchmal das Glück, dass ich gleichzeitig coole Events leiten kann, zum Beispiel im Opernhaus für die Kommission Kulturstelle und dabei anderen Studis ihren „life“-Teil verschönere. Wenn ich von ihnen nach einer Vorstellung höre, dass sie Spass hatten und sich entspannen konnten, macht mich das sehr glücklich!

Weniger **ja** sagen! Mehr *ja* sagen?

Zugleich vernachlässigt man immer Teile seines Lebens, wenn man sich für gewisse „extra-curricular activities“ entscheidet oder verletzt die Gefühle seiner Engsten, wenn man weniger Zeit mit ihnen verbringt. Auf solche Situationen muss man dann reagieren und Prioritäten setzen. Ich war im Präsidium der Kulturstelle, habe diese Rolle aber kürzlich aufgegeben. Nun investiere ich mehr Zeit in andere Vereine, zum Beispiel jene, die junge und ambitionierte Frauen unterstützen: „Women In Natural Sciences ETH“ und „femella“.

Man lernt aus jedem Umfeld andere Strategien, um sich zu entspannen. Ich finde es schlussendlich doch sehr schwer, loszulassen und nichts zu überdenken. Dabei hilft mir Sport, wie Pilates und viel Tanz und Musik!

ANA KITANOVIC, MSc INTERDISZIPLINÄRE NATURWISSENSCHAFTEN



Making a Difference One Story at a Time

ETH-WELT

Fifteen students – from Bachelor’s to PhD, from Math to Environmental Science – are trying to combat discrimination, harassment and inappropriate behaviour in the ETH community.

Hello there! We are SpeakUpETH, and you may not have heard of us (yet)! Allow us to change that.

Who are we?

We are a group of about fifteen students trying to make a difference at ETH by giving a platform to people to speak up about any form of discrimination. We come from all kinds of backgrounds – from mathematics to environmental sciences, from bachelor’s to master’s and PhD level. We also work together with AVETH (the Association of Scientific Staff at ETH), so employees such as research assis-

tants can also profit from our work and reach out to get their voices heard.

Why do we exist?

In 2019, the #wiegETHs survey was conducted among ETH students. From the results we learned that one in ten students had experienced some form of discrimination at ETH. Many students also felt that there were no or not enough spaces to safely speak up about or report such incidents, especially without disclosing your identity and fearing personal retaliation or academic consequences. SpeakUpETH is a project of the equal-opportunities working group of VSETH aiming to combat this culture, and to create a fairer and more inclusive environment.

What do we do?

We have set up a platform where we receive and anonymously publish students’ stories about all kinds

Anna Heck, 26, MSc Applied Maths & Leah Mönkemöller 23, MSc Interdisciplinary Sciences, are both members at SpeakUpETH, hoping to make a positive change for students.

of discrimination and harassment. So far, we have been doing this via an online form and on Instagram. We have recently also launched our own website, where we now publish the testimonials as well. Every single testimonial received is read by our team and then published or not, depending on the wishes of the sender, the content etc. We offer direct support to the people reaching out based on their personal situation and make sure they know where to find help, if or when needed.

Don't worry! Your stories are always kept anonymous to protect your privacy, and we don't give out your personal information to ETH or any individuals. To make suggestions about what needs to change to create a better environment at ETH, we discuss recurring broad topics of the testimonials with the relevant people at ETH. We are trying to communicate between ETH and students to help fight discrimination.

Why does this campaign matter?

Creating awareness: It sheds light on the prevalence of discrimination, harassment, and inappropriate behavior within the ETH community. By sharing anonymized stories, we help members of ETH understand the experiences of their peers and the impact of such behavior.

Support and empowerment: The campaign offers a platform for those who have experienced discrimination or harassment to share their stories,

seek support, and realize that they are not alone. It empowers individuals to speak up and take action against inappropriate behaviour.

Increased visibility of contact points: Making support resources (see help.vseth.ethz.ch for an overview) more visible and known helps students access the assistance they may need when dealing with discrimination or harassment.

Why is this relevant for YOU? As an ETH member you can take action in shaping the environment you are in. Speaking up against inappropriate behaviour as an affected person or witness creates a supportive and empowering culture at ETH.

What is happening during the campaign week? From November 27 to December 1 awareness regarding the #SpeakUpETH-project and its goals will be raised on multiple channels. There will be an anonymous testimonial wall for you to share your story and view the experiences of others. On November 29 from 18.00 to 20.00 we will hold a special event as part of our campaign – for details check our social media. We are looking forward to seeing you there!

How can you reach us?

- Website: <https://speakup.vseth.ethz.ch/>
- Instagram: @speakupeth
- Mail: speakupeth@vseth.ethz.ch
- Submit a testimonial under: <https://bit.ly/speakupETH>

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SECOND EDITION

30 January 2024

14.00 - 20.00

ETH Zurich Main Building

Speakers

Yemi Adesokan - **Gnubiotics**
 Alessandro Bergna - **Syngenta**
 Natacha Bodenhausen - **FiBL**
 Camille Delavaux - **ETH Zurich**
 Adrian Egli - **University of Zurich**
 Virginia Franco - **Yoni Solutions**
 Gregory Resch - **CHUV**
 Alex Sturm - **Resistell**

Swiss Microbiomes FORUM

Swiss ecosystem of microbiome technologies

Image credit: Giorgia Greter, ETHZ

FREE REGISTRATION **HERE!**



Registration is now open for the Second Edition of the Swiss Microbiomes Forum

Tuesday, 30 January 2024 (14:00 - 20:00)
ETH Zurich, Main Building, Audimax and Foyer

The Forum will showcase the latest research and technologies harnessing microbiomes for a vast array of applications. It will bring together key actors of the Swiss microbiome landscape for a unique moment of exchange. The SMF 2024 is co-organized by the NCCR Microbiomes and The Society for Women in Natural Sciences at ETH (WiNS).

Following a successful first edition at the EPFL Rolex Learning Center in May 2022 in Lausanne, the SMF is excited to move to the vibrant Zurich area for its second edition. This event will be free of charge and open to everyone.

We have an exciting line-up of speakers along three main axes: Microbiome diagnostics, interventions and conservation. In addition, a pitching competition will give visibility to projects spinning off as nascent start-ups from Swiss universities. Various booths will showcase industry and startups working on devices and products in the microbiome field. By uncovering the most advanced applied technologies and research efforts, the Forum will offer the opportunity for invaluable networking in a rapidly accelerating topic.

Registration to the event is free but mandatory. See the program and register here: <https://nccr-microbiomes.ch/tech-transfer/swiss-microbiomes-forum/second-edition-2024/>

NCCR Microbiomes: <https://nccr-microbiomes.ch/>
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Where are all the Wunderkinder?

Mozart wrote a brilliant two-hour mass at 12. Einstein constructively wondered about the nature of light at 16. But you never hear about chemistry child prodigies. Why? Because chemistry, like writing, is too much in between theory, practice, observation, and pure thinking.

Admit it, there is just something uniquely insulting in witnessing a child prodigy achieve things that as an adult one would not even dare to attempt. We all know how inhumanly difficult it is to play Rachmaninoff's third piano concerto, a feat not accomplished by most of us in a lifetime. But it is just all the more pernicious when some 18-year old wunderkind not only plays it faultlessly, but with an emotional range and profound understanding, which we claim for ourselves as the few upsides of elderly age¹. However, there is something relieving in this too; such talent surely is innate and no amount of practice on our part could have ever made up for this genetic inequality. What a comforting thought, indeed, that our personal lack of accomplishment is at least not any fault of our own. They simply drew a lucky number in the hereditary lottery and for our mothers their success, contrary to anyone's least favourite Med-school cousin, is no constant cause for comparison to us. After all, our lack of innate genius is no more an indictment of our own efforts than it is of our lineage.

One can distinguish between at least two kinds of genius: the preformed and the discovering.

Think of the young Mozart composing his first full-length mass in G major (K. 49) – comprising six movements and some two hours worth of music – at the meagre age of twelve. It is said that Mozart's notes were just direct copies from an already fully-formed masterpiece in his head, scribbled down hastily without correcting or reworking a single note. This is the first type of genius, which at a singular glance can see together the entire work and derive an oven-ready opus magnum by first principles alone.

The other type involves a careful and experimental process, trying over and over again, reacting to what the material tells you, always following a lead and yet not knowing whither it may go. Picasso painted his first oil painting as a tender nine-year-old (which really was not very good) but quickly mastered his craft – through practice – producing the relatively accomplished Study for a Torso upon joining

the Barcelona Academy of Arts at only twelve years old. Clearly great genius is at work here, but oil-painting inevitably involves a back-and-forth between the artist and the painting, a careful, continuous, and courageous process of discovery.

Read any popular book on physics and you will always gain the same impression: that all scientific progress (because really, is not all science ultimately physics?) was handed down to us by a few, exclusively brilliant men. The history of physics all too often devolves into a loose anthology of biographies. But there are many true whiz kids of physics. Their type of talent is mostly of the preformed kind. There is a nice story about Einstein, who at age sixteen asked a simple question while on a hike in Aargau:

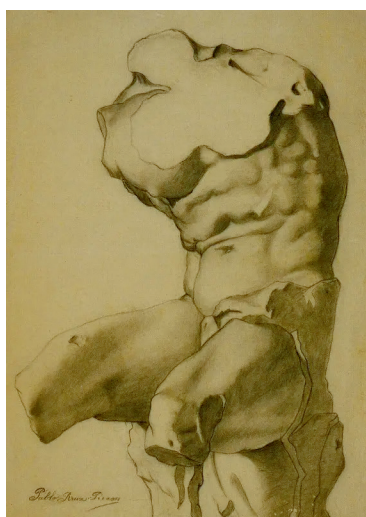
What would I see if I were to sit at the tip of a ray of light? As he puts it himself: "One sees in this [... that] the germ of the special relativity theory is already contained"². Unlike Mozart, the young Einstein did not then immediately write down the entire theory of special relativity in one go. Nevertheless, the process of seeing clearly, at once, the entirety of what a set of basic assumptions entails, is perhaps not unsimilar to how a composer writes music, grasping all possible modulations through the scales, the reprises of the melody, the dynamic scope at once.

At the other extreme, we have biologists like Darwin, father of the theory of evolution. From a young age, he collected mussels, coins, and minerals, classifying and studying them with uncommon diligence. These, too, are the inklings of a great mind, engaged in the deepest contemplation of nature. But his most important work only came after more exposure to the world: travelling on the HMS Beagle in 1831 on a trip around the globe. It is a type of genius that requires direct exposure to the material – like a painter working with oil – and which assumes as much perseverance as lucid attention to minute details.

Chemistry falls into neither category. So, it appears, does writing. Most authors do not begin to churn out good texts before their mid-twenties and not even the most supportive parents put their offspring's first literary musings in front of cheering crowds. There are no child prodigies in literature. Goethe, Shakespeare, and Proust all published their first piece of writing with 25³. There is something very remote in writing. For all of human history, we have drawn and sung. Cave paintings and bone ins-

Leif Sieben, age=3xsurname-1,

is currently caught up in a superposition of Bachelor and Master in Interdisciplinary Sciences (Bio-N) and is happy to report that he is no genius himself. He has also always been a below average painter – particularly at the age of four.



Study for a torso, 1892. Pablo Picasso.
<<https://www.pablo-ruiz-picasso.net/work-3939.php>>.

truments are among the earliest known evidences of human culture and no civilization today does not practice art and music. It is true that humans have probably told oral stories for just as long, but the written word is a rather recent addition to our canon and some peoples have not felt the need to develop a written alphabet to this day. We know this from our own experience. We all had to learn how to read and write at some point, but we all happily sang and scribbled long before ever being taught how to do so.

It is a funny thought that just like there are no child prodigies in literature, there are also no wunderkinder of chemistry. Most chemists require many years for their breakthroughs and one simply does not find a fully formed, widely knowledgeable chemist

below the age of eighteen. Like writing, chemistry is a language that must be learned. Unlike physics, no insight can be fully derived from theory. All meaningful chemical discovery requires the creation of some molecule in the laboratory and yet, to develop such an experiment in turn requires a decent grasp of the theory and to actually perform it, one needs years of practice beforehand. Unlike biology, chemical understanding goes beyond mere classification and external observation. One cannot see a molecule! Even the simplest analytical assay requires both substantial practice and theoretical knowledge of the technique. As always, chemistry is somewhere in between. It can neither rely on theory, like Einstein deriving relativity from a journey on a beam of light, nor can it do without. Chemistry requires careful observation, but contrary to a biologist like Darwin, no seven-year-old can simply wander into a modern laboratory and observe chemistry first-hand.

That is not to say that some do not pick it up quicker than others. Some people also never learn how to read and somehow, we cannot help but suspect that these chemical illiterates – who by analogy should exist in our field too – all seem to aggregate in our first-year lab practical. Chemical experiments require theoretical understanding, yet to truly understand theory one must have been in the lab. It is truly a chicken-and-egg type problem.

The fastest way to expedite one's chemical career is still to expose oneself as much and as early to the laboratory as is legal while reading as much chemical literature as possible. One can begin one's practical training earlier – but there is no way around it. The rate of information flow in chemistry will always have its bottleneck at the neck of some bottle full of chemicals and no person can accelerate chemical discovery to beyond the kinetic speed of a given reaction.

But not all chemists are born alike. Some unquestionably see further and act more boldly than others. Barry Sharpless, who was instrumental in developing both stereoselective oxidations and click chemistry, two pillars of modern chemistry, is

one such example of an amazingly productive and creative chemist. He also has the rare honour, shared with only two other people, to have won a Nobel prize twice in the same field. For all intents and purposes, Sharpless most likely is a genius. But to understand his importance for chemistry, this fact is essentially irrelevant. Sharpless could not derive chemistry from first principles, but he had the courage to take these core tenants of the field seriously. The paper that established click chemistry simply claims that chemical synthesis should only focus on reactions which (i.) can make use of many building blocks, (ii.) are quick and easy to perform, and (iii.) work in water (the only truly organic solvent)⁴. Sometimes thinking the most basic things through to the bitter end is enough to win a Nobel prize.

But Sharpless is also a highly skilled synthetic chemist with decades of laboratory experience. He (and the many chemists working for and with him) always tackled the right problems, but solving chemistry inevitably means trying many more things that fail than work. In his first Nobel lecture, Sharpless once described his approach as "probing and poking." All chemistry requires some amount of tinkering and simply systematically trying every element there is (to buy) in the periodic table. Ultimately, this is where chemical intuition is born. The psychologist Daniel Kahnemann, in his book *Thinking, Fast and Slow*, claims that intuition can only be gained in an environment with reliable and direct feedback: An anaesthesiologist will develop intuition very quickly, administering the wrong dose of a sedative will have the patient wake up too early with obvious, devastating effects; a radiologist on the other hand gets little feedback on their predictions, as they are not the ones to perform the surgery. Such intuition might be a sorry reward for many a chemist after years spent in the laboratory. But chemistry cannot do neither without theory nor without practice; unfortunately, both require time.

In the end, however, true genius will prevail and there is but little distinction between the composer, the painter, and the writer, or the chemist, biologist, and physicist. No great thing is borne out easily and not even the greatest talent saves one from struggle or from error. There is never a lack of worthy problems in science, and we should endeavor to recruit to our common cause as much talent as we can find.

¹ To those who fail to relate to this experience, the now famous recording of „Rach's third“ (as friends call it) by Yunchan Lim at the 2022 van Cliburn competition cannot be recommended highly enough. Search for it on YouTube.

² Unlike many other alleged Einstein quotations one can find on the internet, this seems to have some basis in reality, see A. Einstein, *Autobiographisches*, F. Vieweg & Sohn Verlagsgesellschaft mbH, Braunschweig, in *Albert Einstein als Philosoph und Naturforscher*, 1983.

³ Exceptions exist of course. Arthur Rimbaud published his famous poem *Le Bateau Ivre* at sixteen. In general, many poets seem to have produced good work much earlier.

⁴ Kolb, H.C., Finn, M.G. and Sharpless, K.B. (2001), *Angew. Chem. Int. Ed.*, 40: 2004-2021.

SEP 2023

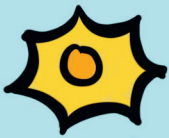
IN THIS SEMESTER

I'M GOING TO HAVE A WORK-LIFE BALANCE

WEEK 1

WORK (50%)

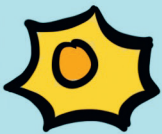
LIFE (50%)



WEEK 7

WORK (70%)

LIFE (30%)



LERNPHASE

WORK (100%)

2 HOURS OF SLEEP PER DAY

WATCHING LECTURES IN 2X SPEED

OVERDOSE OF COFFEE AND ENERGY DRINK

COOKING INSTANT PASTA





Should I stay, or should I go?

If you know the song, you know that “Darling” needs to make a decision here, and a complex one at that. But how does it work? How do we choose between the options we have?

To understand what goes on in Darling’s brain during this decision-making process, let’s first briefly discuss how brains work. Imagine your brain was planet Earth: the smallest intelligent part of this planet would be humans, with specific nuances and intrinsic properties that make them unique, and yet, human. They would be spread all over the surface of this imaginary Earth, but there would be regions called cities where their population would be denser. These humans can interact with each other through various means, either by talking in person or by texting someone on the other side of the globe. Our brain is exactly like this, except for the fact that neurons (the resident humans) are not only present on the surface, but also in the core, and there are 86 billion of them (with almost as many glial cells), and each of them is on average connected to 1,000 other neurons, talking to and texting each other even while we sleep. Also, the entirety of this massive hub of information and connections needs to fit in our skull, in a slightly-above-one-kilogram shape that is almost entirely made of water and fat.

Mehdi Aghilibehnam, 29,

is doing a master’s in Neuroscience and has a somewhat functioning brain. Would love for you to contact him and pinpoint the wrong parts of this piece, and urges you to read about the “Woman, Life, Freedom” movement.

This fatty, watery blob is forced to make decisions more often in the day than we can consciously count. These decisions start when we decide to get out of bed in the morning, and usually end when we decide to leave our books (or phones, we’re not all saints) aside and fall asleep at night. They can be as simple as which cereal we choose in the morning, to more complex social, economic, or educational decisions. In principle, we are faced with two or more options, and our decision would represent our commitment to one. Conceptually, this commitment is guided by the prior knowledge and experience we have about the options (so-called prior in neuroscience), by the costs and rewards associated with each option and their outcome, and by costs that would accumulate the longer we take to decide. Let’s say you have to choose between pizza and a sandwich for lunch: you had a ham sandwich two days ago and don’t really feel like it (prior), but it’s 5 francs cheaper (cost); on the other hand, pizza looks more delicious and it’s bigger (rewards). Keep in mind the longer you take to decide, the more you’ll suffer from hunger (time-related costs). Many simple or complex decisions could be explained by these metrics.

How does all this computation happen in the brain, usually in the blink of an eye? In fact, decision-making is a highly complex procedure that is the result of the coordinated activity of multiple, highly specialised cities in our brains. The amygdala, for instance, keeps us away from the aversive costs, while our brain’s dopaminergic system (a kind of text message), orchestrated by the ventral tegmental area, pushes us towards the reward. We have memories and prior experiences encoded in the hippocampus, talking constantly with major enforcing regions in the cortex (the entire surface of our brain; so-called grey matter) that drive our actions and behaviours and sense our surroundings. Finally, we have the prefrontal cortex, an extremely vital part of the decision-making machinery, where all this information from the mentioned cities and so much more is integrated and processed, leading to a decision. This remarkably reductionist example, which I hope inspired you to learn more about this subject, shows why many psychiatric disorders are accompanied by problems with decision-making. Hopefully, Darling does not suffer from one.

Mulligatawny Soup

(Vegan)

When Chinese immigrants first arrived as labourers in Peru in 1849, they brought along cooking techniques and memories of recipes from their homeland. Confronted with a lack of traditional ingredients, they turned to local staples and produced dishes like “Lomo Saltado”, a dish of Chinese-style stir-fried beef that appealed to local palates. The French, at the start of their imperialism in Vietnam, introduced the locals to wheat baguettes, which then gave birth to “Bahn mi”, an iconic Vietnamese sandwich filled with meat, coriander, and a variety of fresh and pickled vegetables.

Throughout history, whenever groups of people moved across the world to call new lands their home, fusion cuisines emerged. Dishes like these have elements from two or more cultures and can afford to leave authenticity and tradition behind, and often find themselves the richer for it.

The recipe below is for such a dish, a dish that is between two almost opposing cultures, yet comes together in a way that is disrespectful to neither. Our journey begins in Colonial India, specifically in the state of Madras, where a local dish by the name of *miagu ta i* (in Tamil, literally: pepper water), thought to be closely related to the popular dish *rasam*, was adopted by the British. The dish was traditionally eaten with rice, but the British transformed it into a soup and anglicized its name to Mulligatawny. Through the years, the recipes for this dish have varied significantly, with the addition of cream, apples and even meat to appeal to the colonial palate. By the beginning of the 19th century, the soup had become wildly popular, both in Britain and in India. It is also featured as the first course in the popular British film *Dinner for One* and is also mentioned as being Batman’s favourite soup in *Batman #701*.

Various recipes for the soup can be found today, with one thing in common: It is a rich creamy soup, slightly sour, against a backdrop of warm Indian spices. The version you see below is often served in today’s India and the one I grew up eating. A big batch of this soup makes for a perfect companion on a cold winter’s day during this year’s Lernphase.

Gaurav Singh,

MSc. Energy Science and Technology, believes that every culinary creation has a story to tell.

Ingredients

Aromatics:

- A few tbsp oil of choice for frying
- 1 Large clove of garlic (minced)
- 1 Shallot (finely chopped)
- ½ Fresh red/green chili (finely chopped)
- ½ Thumb-sized piece of ginger (grated)

Spices:

- 1 Pod of cardamom or 1 tsp of cardamom powder
- 1 Stick cinnamon
- 2 Tsp coriander powder
- 1 Tsp cumin powder (Kreuzkümmel)
- 0.5 Tsp turmeric powder

Veggies:

- 1 Large potato (grated)
- 2 Medium-sized carrots (grated)
- 1 Red bell pepper (chopped)
- 80 g Red lentils (soaked for 20 minutes)
- ½ Tbsp of tamarind paste (optional)¹

Finishing touches:

- ½ Can coconut milk
- The juice of 1 lime
- Coriander leaves

The Recipe

(Serves 2 -3)

Steps:

- 1) Heat a pan with a couple of tablespoons of an oil of your choice and sweat the aromatics until translucent.
- 2) Add both the ground and whole spices to the pan and toast them until fragrant; this only takes about 30 seconds. Skip the spices you don’t have; life is not about perfection.
- 3) Add all your vegetables and soaked lentils along with 2 cups of vegetable stock. You can also add water and throw a stock cube in there. (And, in extreme cases of student cooking, just water and Aromat).
- 4) Let the mixture simmer on medium heat for 25 to 30 minutes or until the lentils are cooked through. At this stage, your soup may not look appetizing, but try to have faith.
- 5) Let the mixture cool down slightly before blending thoroughly with a stick blender. Don’t forget to remove the cinnamon stick before you blend it, or you might end up with a broken blender.
- 6) Once blended, add the coconut milk, lime juice and season with salt and black pepper. Garnish with red pepper flakes and enjoy warm with a thick slice of bread.

¹ Tamarind paste is found in most recipes for this soup and is marked as optional because it’s not an ingredient commonly found in Swiss households.



Die Cathédrale in der Abendsonne.

Zwischen Ländern und Kulturen: Die Grenzregion Elsass

Grenzgebiete sind immer ein Treffpunkt zwischen Kulturen. Vor allem, wenn sie im Laufe der Geschichte oft Nationalität wechseln. Solch ein Gebiet ist das Elsass, von dem meine Heimatstadt, Strasbourg, die Hauptstadt ist. Seit fast 80 Jahren gehört das Elsass zum heutigen Frankreich, aber diese längere friedliche Phase ist eine Ausnahme in der turbulenten Geschichte dieser Region, die in den letzten Jahrtausenden viel Krieg und Herrschaftswechsel erlebt hat.



Die Place de la République mit dem ehemaligen Kaiserpalast, heute Palais du Rhin.

Zwischen Bergen und Flüssen

Das Elsass wird in allen Richtungen von der Landschaft natürlich begrenzt. Im Süden grenzt es an das Jura, im Westen erheben sich die Vogesen, ein französisches Mittelgebirge. Die nördliche Grenze bildet die Lauter, während der Rhein die gesamte westliche Grenze definiert, welche heute mit der deutsch-französischen Grenze zusammenfällt. Das zwischen den Anfängen der Vogesen über den Rhein bis hin zum Schwarzwald eingegrenzte Land ist absolut flach und formt den sogenannten Oberrheingraben. Dieser ist aufgrund der vielen Flüsse, insbesondere der Ill und des Rheins, ideal für landwirtschaftliche Nutzung. Die Vorbergzone erlaubt Weinanbau, wofür die Region sehr bekannt ist.

Ein kurzer Überblick über ein langes Hin und Her

Die günstige geographische Lage des Elsass machte es zu einem einladenden Gebiet. Das Rheintal wurde von Menschen schon bei der ersten Besiedlung Europas vor ca. 50 000 Jahren bevölkert. Im 2. Jahrtausend v. Chr. bewohnten Kelten die Region, gefolgt von den Germanen. Zwischen 58 und 52 v. Chr. eroberte Julius Caesar Gallien und annektierte auch das heutige Elsass. Im Jahre 12 v. Chr. wurde die Stadt Argentoratum, heute Strasbourg¹, Hauptstadt des Elsass, als militärisches Lager am Rhein gegründet, welcher ursprünglich die Grenze zwischen dem römischen Reich und den «Barbaren» bildete. Dennoch entstand eine gallorömische Mischkultur durch den sozialen und kommerziellen Austausch beider Völker. Im 4. Jh. besiedelten ausserdem die Alemannen das Gebiet. Dadurch entstand die elsässische Sprache, die eng mit dem Schweizerdeutschen – ebenfalls eine alemannische Sprache – verwandt ist.

Nach dem Zerfall des Imperium Romanum im 5. Jh. gehörte das Elsass zum Fränkischen Reich. Die alemannische Bevölkerung wuchs immer stärker. Infol-

ge der Aufspaltung des Fränkischen Reichs wurde das Elsass in den folgenden Jahrhunderten zwischen dem Fränkischen Reich, Lothringen, dem Mittelfränkischen Reich, dem Ostfrankenreich und dem Westfrankenreich hin- und hergeschoben. Die Franken konnten sich anscheinend echt nicht vertragen.

Das Ostfrankenreich mitsamt dem Elsass wurde im 10. Jh. Teil des Heiligen Römischen Reiches, was sich in einer aussergewöhnlich langen Pause bis 1648 nicht änderte. Der Dreissigjährige Krieg (1618-1648) brachte grosse Zerstörung mit sich und endete im Westfälischen Frieden, mit dem ein Grossteil des Elsass an das Königreich Frankreich übergeben wurde. 1681 wurde auch Strasbourg annektiert, wodurch das gesamte Elsass nun zu Frankreich gehörte. Dennoch blieben die Hauptsprachen des Elsass Deutsch und Elsässisch. In dieser Zeit erlebte das Elsass eine Blütezeit in Kultur und Wirtschaft.

Diese Freiheit wurde nach der französischen Revolution 1789 mit der Zentralisierung Frankreichs kleiner. Unter der Herrschaft Napoleons wurde das Elsass immer französischer. Nach dessen Niederlage wurden die Grenzen Frankreichs 1815 auf die noch heute gültigen gesetzt, mit dem Rhein als Grenze zwischen Frankreich und Deutschland.

Der Preussisch-Französische Krieg brachte das Elsass 1870 zusammen mit Lothringen durch die Gründung des Deutschen Reiches wieder nach Deutschland, wo es bis zum Ersten Weltkrieg blieb. Deutsch wurde infolgedessen wieder zur Hauptsprache der Region.

Nach dem Ersten Weltkrieg 1918 wurden im Versailler Vertrag Elsass und Lothringen an Frankreich zurückgegeben, nur um 1940 im Zweiten Weltkrieg von den Nazis wieder an Deutschland annektiert zu werden. Während dieser Zeit wurde das Sprechen von Französisch und Elsässisch verboten, und viele Elsässer wurden zwanghaft in die SS rekrutiert, die sogenannten «Malgré-nous» («Gegen unseren Willen»). Die jüdische Bevölkerung, die sich seit mehreren Jahrhunderten angesiedelt hatte, wurde grösstenteils deportiert und ermordet.

Nach dem Ende des Zweiten Weltkrieges 1945 gehörte das Elsass wieder zu Frankreich und wurde zur «Région Alsace». Nun wurde wiederum die deutsche Kultur unterdrückt und die elsässische Sprache marginalisiert. Strasbourg entwickelte sich aber zu einer bedeutenden Stadt in Europa und in der Europäischen Union.

2016 wurde die Région Alsace mit Lothringen und Champagne-Ardenne zur «Région Grand-Est» fusioniert, was aufgrund der sehr verschiedenen Geschichten und Kulturen dieser Regionen zu grosser Entrüstung im Elsass führte.

Strasbourg als Illustration der Geschichte des Elsass

Die Hauptstadt des Elsass, Strasbourg, ist eine wunderbare Collage aller unterschiedlichen Epochen, die die Stadt erlebt hat. Ein einfacher Spaziergang durch die Stadt ist eine Zeitreise. Strasbourg entstand aus

Léona Dörries,

B.Sc. Biochemie – Chemische Biologie, freut sich auf Dezember in Strasbourg, wo die gesamte Innenstadt nach Zimt und Glühwein duftet.

¹ Ich bleibe lieber beim französischen Namen der Stadt, als den deutschen Namen – Straßburg – nach schweizer Rechtschreibung mit ss zu schreiben, was einfach wehtut.

einer keltischen Siedlung auf einer kleinen vom Fluss Ill geformten Insel, da diese etwas höher gelegen und somit etwas trockener war als das sonst sumpfige Gebiet. Diese Insel, die Grande-Île de Strasbourg, ist die heutige Innenstadt Straßburgs.

Wie oben erwähnt, wurde 12 v. Chr. dort das römische Lager Argentoratum gegründet. Römische Lager hatten meist zwei Hauptstrassen, die Via Principalis und die Via Praetoria. Die Via Praetoria aus der römischen Zeit existiert noch und ist heute in die Rue des Juifs und die Rue des Hallebardes unterteilt.

Die Strassen auf der Île sind eng und krumm, wie es im Mittelalter typisch war. Im Zentrum steigt die Cathédrale de Strasbourg, das Münster, in die Höhe. Der Bau des Münsters begann im 11. Jh., also in der Zeit des Heiligen Römischen Reiches, und dauerte bis ins 15. Jh. Mit 142 m war die Cathédrale de Strasbourg von 1647 bis 1874 das höchste Gebäude der Welt.

Vor der Insel auf der anderen Seite der Ill ändert sich die Architektur drastisch. Dort ist die sogenannte Neustadt, die im deutschen Kaiserreich 1870-1914 erbaut wurde. Besonders beeindruckend ist die Place de la République, um die sich einige eindrucksvolle, im preussischen Stil gebaute Gebäude reihen, darunter der ehemalige Kaiserpalast. Unter anderem beherbergen diese Gebäude heute die Universitätsbibliothek und das Theater von Strasbourg.

Die elsässische Sprache ist auch noch auffindbar. Nach dem Zweiten Weltkrieg fiel die Zahl der Sprecher zwar drastisch aufgrund der politischen Massnahmen ab, aber heute gibt es Bemühungen die Sprache zu retten. Die meisten Strassenschilder geben die Namen auf Deutsch und auf Elsässisch wieder, wobei manchmal die Unterschiede zwischen den Strassennamen die Geschichte der Strasse widerspiegeln. Zum Beispiel ist der elsässische Name der Place de la République noch «Kaisersplatz». In der Stadt hört man relativ wenig gesprochenes Elsässisch, aber wenn man auf den Wochenmarkt geht, kann man es gelegentlich vernehmen.

Strasbourg ist heute ausserdem als Grenzstadt zwischen den langfristig rivalisierenden Nationen Deutschland und Frankreich ein Zeichen der Versöhnung Europas. Strasbourg ist zusammen mit



Die Maison Kammerzell, das älteste Gebäude in Strasbourg nach dem Münster.

Brüssel die Hauptstadt der Europäischen Union und beherbergt das EU-Parlament, sowie den Hauptsitz der EU-Armee Eurocorps und das Europäische Direktorat für die Qualität von Arzneimitteln. Ausserdem sind auch der Europarat und der Europäische Gerichtshof für Menschenrechte in Strasbourg zu finden.

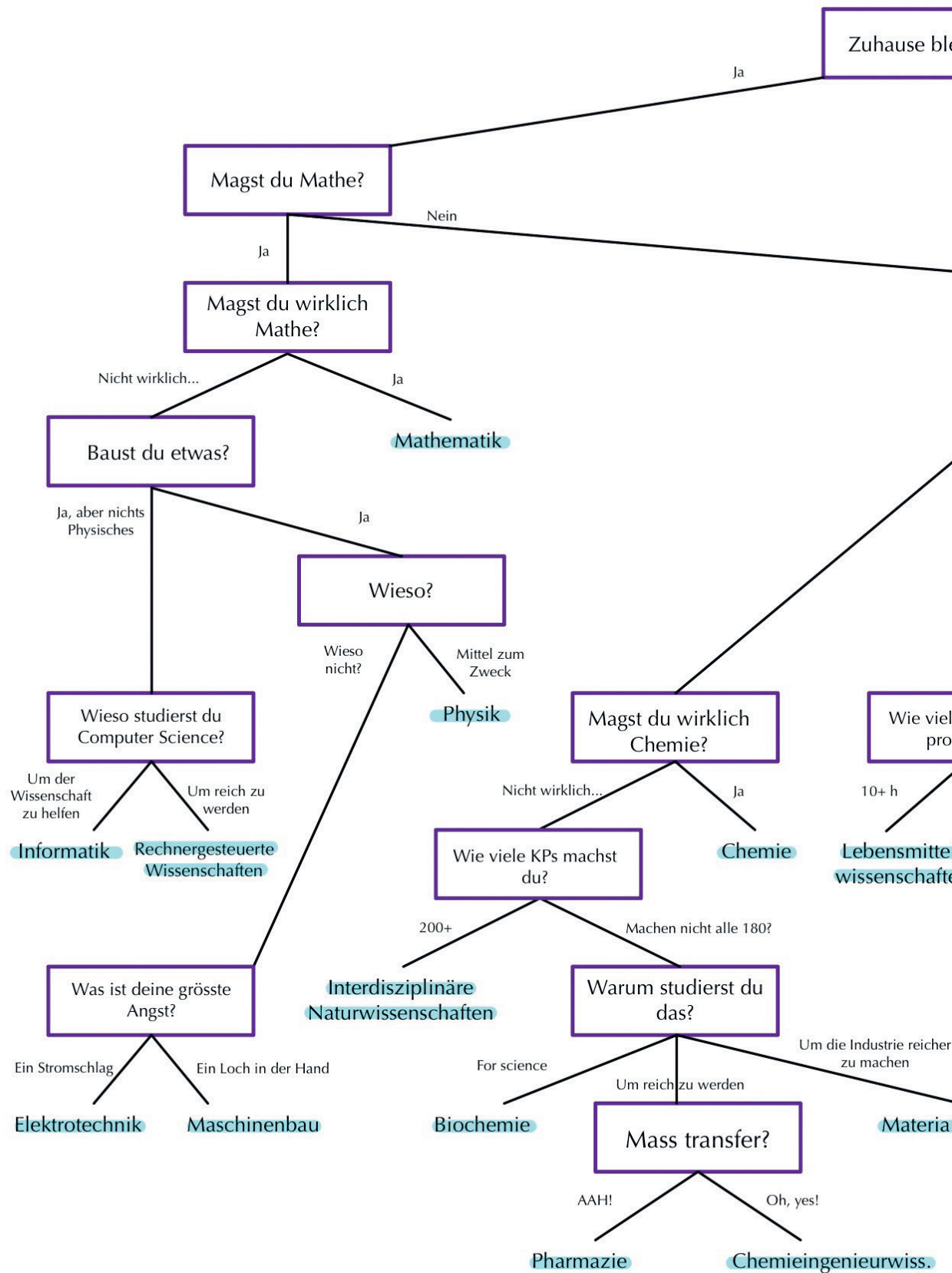
Dazwischen, aber dadurch einzigartig

Das Elsass ist ein wildes Gemisch aus verschiedenen Kulturen. Durch die vielen Wechsel in der Herrschaft ist es heute eine Region, die, obwohl sie zu Frankreich gehört, nicht ganz französisch und aber auch definitiv nicht deutsch ist. Stattdessen ist sie ein Produkt beider Kulturen und somit eine wunderbar einzigartige Gegend.



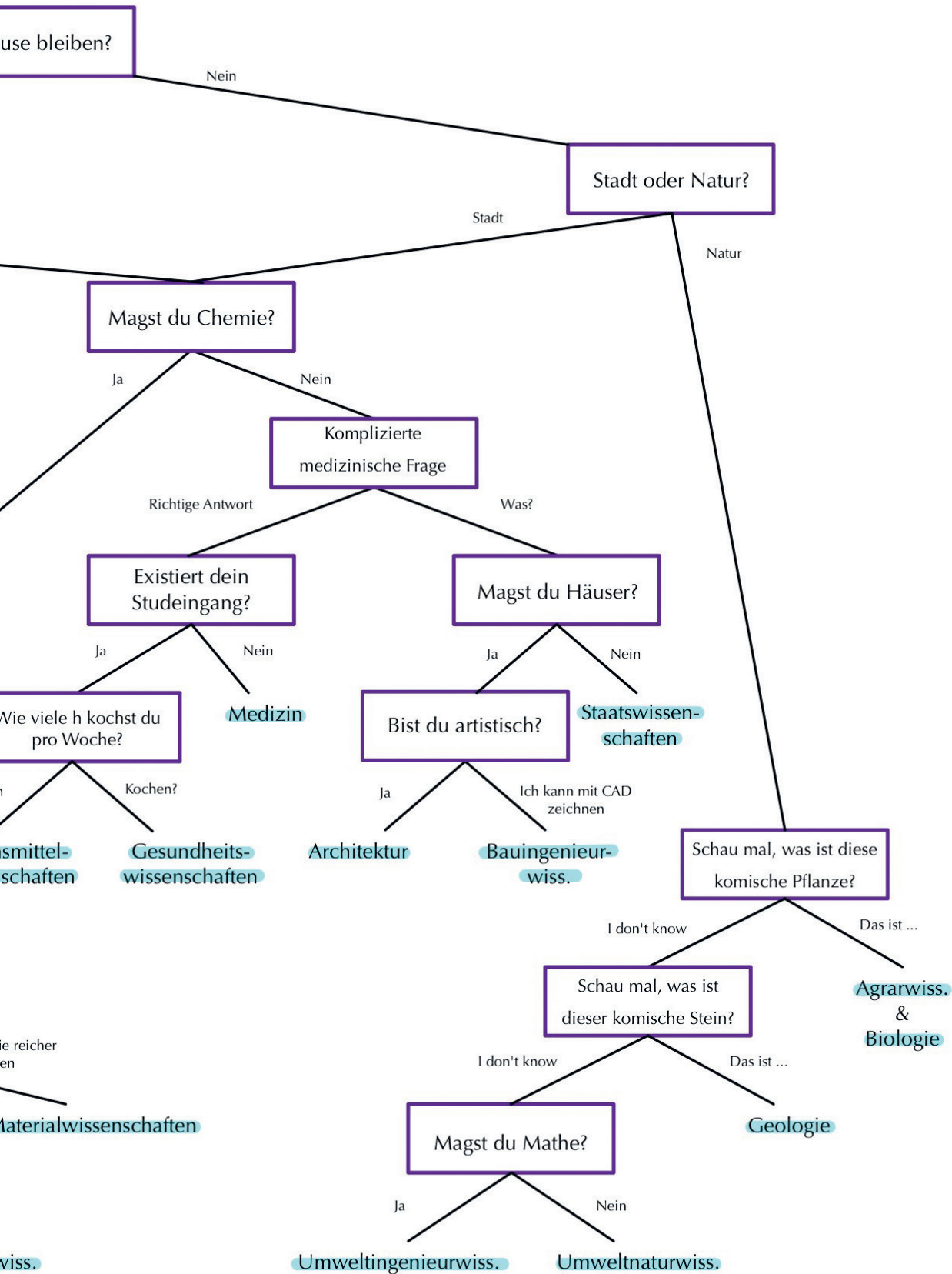
Der Weihnachtsbaum auf dem Weihnachtsmarkt, einer der ältesten Weihnachtsmärkte der Welt.

Welcher Studien g



IN BETWEEN

Wohin gehst du?



Start-ups: Between Academia & Industry

We've spoken to three people with an ETH background currently working at research-based start-ups — about research in the industry, academic paths, and general life advice



Christopher Gordon

What is your academic path?

I am originally from Austria, where I went to school and did my civil service, after that I chose ETH to do my studies. At the time this was mostly a random choice but it turned out to be one of the best decisions of my life just because it impacted so much of what came after this. I then had the opportunity to join the Copéret Group at the Institute of Inorganic Chemistry here at the ETH for my PhD.

What is your industry experience?

After my PhD I was considering both academia and industry but I ended up

settling as a consultant for McKinsey & Company mostly focused on the chemical industry but also working on life-sciences, sustainability, and public health. After two years there, I moved to Climeworks, an ETH spin-off developing technology for direct air capture to remove CO₂ from the atmosphere.

What is the difference between academia and industry for you?

In academia you have the privilege to do fundamental science without having to justify yourself. In industry you get more of the application perspective, which can be really valuable as well. But I think academia and industry are not as far apart as I believed as a student. I always thought of industry as the other side of life. But even during my PhD we ended up collaborating with a company and it ended up being an extremely fundamental science project. So there can be a strong connection between them.

What are the tradeoffs between academia and industry?

Academics are often expected to move around a lot and people often have much less job security than in industry. In industry however things need to have quite short-term benefits, which can be good when it forces you to work on things that need solutions now but it does prevent you from taking the time to work on more fundamental things.

Did you ever feel in between industry and academia?

Because I left academia after my PhD for consulting, which is very business oriented of course, I never really felt in between the two then. But I feel with Climeworks we are really in between academia and industry because we are a technology company, which I find very exciting. There are a lot of fundamental questions we have to answer. We talk to a lot of academics in our field and this is very fruitful for both sides.

Could you imagine going back to academia?

I could imagine this personally, yes. It would definitely be a very uncommon path coming back to academia after having been so far on the business side of things. So I am not sure whether academia can imagine this as well (laughs).

Where do you want to end up?

Fundamentally, I want to maximize the impact that I have on the world around me in a positive way. Climeworks is a great place to do this because we are developing very impactful technology that will hopefully enable us to fight climate change a little bit more effectively in the future.

Leif Sieben &
Gaurav Singh



Carole Zermatte

What has your academic path been like so far?

I am originally from the French speaking part of Wallis and then decided to study food science at ETH. For both my Bachelor and Master thesis, which I did in Singapore, I worked with microalgae. What do you do now in industry?

I joined Food Brewer six months ago, first as an intern and now as a junior scientist and I am responsible for the microalgae project there. Food Brewer uses pluripotent cells derived from plants as well as microalgae to produce food for humans as well as feed for animals. One exciting application is to produce fatty acids to replace very unsustainably farmed fats like palm oil.

Do you ever feel like you are in between industry and academia?

Starting at Food Brewer was really this jump from academia to industry for me. I was considering doing a PhD for a long time and I had some concerns before going to industry. But those fears turned out to be completely wrong. At Food Brewer we are really engaged in cutting-edge science and we do fundamental research while working towards relevant applications. In a way, I feel like I am doing the industry version of a PhD. I am really getting the best of both worlds here.

Are you still in regular contact with academia?

What we do is so novel that there really is not a lot of expertise in the world – both in industry and in academia. We have a number of academics around the world working for us as scientific consultants, including some from ETH actually. Our senior scientist for example was hired through a paper that the cofounders of Food Brewer had read. She was basically the only person in the world who could do this type of research.

What is the difference between industry and academia for you?

I think we can approach the same problems. But in academia we try to understand everything in depth while in industry one feels much more pressure from the investors and clients. You cannot just do some fancy science but you have to adapt to the market to survive.

Could you imagine going back to academia?

Yes. Sometimes I miss doing science just for science's sake. But I also really like this pragmatic approach in industry where you have to move fast and you can see the application of your research in a much shorter time span.

Has the way you do research changed after moving from academia to industry?

No, I think fundamentally it is the same. The big difference is that I am now in contact with clients. This allows me to understand the needs and requirements from the customer side much better and I am really working towards a precise goal in my research.

Any advice looking back?

It is funny because studying food science was the least clear decision I ever made. I wanted to study at ETH – in German – and food science struck me as the most versatile. In French we would say: I am very “polyvalent”. But looking back now everything makes sense and I can link every event and every person I ever met to what I do now. I even found myself going back to my old lecture notes! At the time I thought I would never use any of this. So maybe the message is: Do not worry too much about what you do after your studies. When I started at ETH my job today did not even exist!



David Taylor

What is Unbound Potential?

Unbound Potential is a Zurich-based start-up that aims to solve the growing problem of energy storage using a new kind of redox-flow batteries.

Who is David?

David is the CEO and founder of UP. He was working as a postdoctoral researcher at ETH, developing cooling systems for batteries, when he came up with the idea for a new battery technology.

How different are academia and industry? Have you ever worked in industry before?

David: I actually gathered some experience working at companies beforehand. During my studies, I worked part-time at GE and at Airbus. But of course, running your own company is an entirely new experience.

Working in academia is vastly different from working in industry. The day-to-day experience is radically different. Obviously, in a research environment you're not responsible for your own budget strategy. In an industrial environment, you have to link every piece of research you do to a concrete future goal. This means that you get to do less exploration and need to work towards a specific objective. But it also helps to have a bigger vision. So, I actually don't think that being market-

driven and needing to worry about reaching these discrete milestones prevents you from doing creative and interesting research.

Do you feel like you're in between Academia and Industry?

Yes and no. Companies with a focus on innovation like ours have to do a lot of the same things academic institutions do, like being open to the state-of-the-art technology, reading the latest literature, and talking to the experts in the field. We also have to work with trial and error, and we try to be open to new solutions — we aren't married to using one specific sort of technology to solve a certain problem.

At the same time, we are also different from academia in important ways. Firstly, academic knowledge is meant to be shared. The innovation we add here at UP is confidential. We are not trying to publish a paper with our research, so our data generation and documentation differs from those of an academic setting. We hope to be able to make some aspects of our research open-source one day, but that is still in the future.

I'd say that we have an academic mindset but applied to industry. At UP, we try to have a flat hierarchy, to make it easier for people to speak up and feel less like they are trapped in the mechanical workings of a big

corporation. We also have a "maker mindset", which is something we have learnt from being at ETH.


How has the experience been for you personally?

It's been awesome. At first, I was afraid of the business and administrative aspects of starting a company, but once I moved out of my comfort zone (the lab) and confronted the stuff I found scary, I was able to learn a lot of things very quickly. I feel like I've gained years of experience in the past year.

I thought I would miss the lab more. Initially, I thought I would still be able to spend half my time in the lab, but now I know that it's not going to happen. I still have an overview of what is going on in the lab, and it is important for me to understand the logic behind why things work (and why they don't). But I don't need to understand the exact details of the experiments, and I trust my team for those things. I have to manage the company, figure out how to get funding, develop business models, etc.

I am most attracted to stuff I don't know yet. I created the company because I had the desire to make an impact. Technologies can only have an impact if they are deployed, and they are only deployed if they are economically feasible. That is the goal I am most focused on.

ETH CINNAMON ROLL CLASSIFICATION (see knowyourmeme.com)

Do you ride the Polybahn?	UP	DOWN	NEITHER
BOTH WAYS 			
Which Mensa do you prefer?	CLAUSIUSBAR 	FOOD + LAB	DOZENTENFOYER
POLYTERRASSE			
What about coffee?	BUCHMANN	TANNENBAR	HG STARBUCKS MACHINE
LEONHARDSTREPPE 			
Which ASVZ class do you take?	SUPER KONDI BODY ATTACK	MUSCLE PUMP 	BODY COMBAT
KONDI			
Do you f*! with the new Drake album?	YES + WILL ADMIT IT	YES + WON'T ADMIT IT	NO 
YES, HEAVY <small>Message read like a brake light</small> 			
			
LOOKS LIKE A CINNAMON ROLL; IS ACTUALLY A CINNAMON ROLL	LOOKS LIKE A CINNAMON ROLL; COULD ACTUALLY KILL YOU	LOOKS LIKE THEY COULD KILL YOU; IS ACTUALLY A CINNAMON ROLL	LOOKS LIKE THEY COULD KILL YOU; COULD ACTUALLY KILL YOU
			© emv 2023 (👁️/👁️)



Gabrielle Vance, 34,
is a doctoral student in Earth Sciences who looks like a cinnamon roll and is a cinnamon roll. See more cartoons on Instagram @gabrielle_t.v.

In Between Music, Theater, Propaganda, and Entertainment: Opera

Spending many hours in a dark and not necessarily well-ventilated room, observing a story with zero suspense – a story in which people take a solid quarter of an hour to die of an instantly acting poison, and crowds spend another quarter of an hour singing about leaving and never move a centimeter. Why on Earth would you ever do that to yourself? Read on to be convinced.

What?

The word opera, derived from the Latin word opus, refers in its original Italian to any activity aiming to achieve a specific goal or the result of that activity. God's work in creating the Earth is an opera, a completed (or attempted) surgery is also an opera. Discussing most things in theory is easy – but one would want to see the act in practice – in opera. Even in the musical sense, opera is just the same.

Many successful operas are based on plays that were also very successful in their own right: Otello and at least three mainstream Romeo and Juliet operas are based on Shakespeare. La Traviata grew from a play by Alexandre Dumas fils, Rigoletto from one by Victor Hugo, Le Nozze di Figaro and Il Barbiere di Siviglia from the the same Beaumarchais trilogy. Sarah Bernhardt played the title role in the première of the play Tosca is based on.

Maria Callas vs. Sarah Bernhardt?

So why take a successful literary and dramatic work, cut some of the content, simplify some and make the

rest repetitive to fit it into constraining musical numbers, and then put it onstage, again – with a Maria Callas instead of a Sarah Bernhardt? The reason is provided in Book III of Plato's Republic, where Socrates casually remarks that "musical training is a more potent instrument than any other, because rhythm and harmony find their way into the inward places of the soul, on which they mightily fasten". Socrates then goes into a long discussion of which harmonies must be "banished", depending on whether they are "of any military use" or rather likely to induce "softness and indolence". In the 23 centuries since, we've grown less accustomed to thinking about music in terms of the exact shape it can mold the listeners' soul into and have perfected using it to advance our ideological agendas.

In the beginning was...the note staff

It all starts with the necessity of writing down music – i.e., coming up with a system of musical notation. The first music in desperate need of being written down is the Gregorian chant. We are in the 8th century. The first lines and arrows indicating melodic direction are no abstract curiosity of music theorists, they are meeting an urgent political need. The Carolingian empire has turned into the Holy Roman Empire thanks to the military efforts of the

Carolingian kings who aimed to create and later defend the Papal States. The newly Holy empire wants to centralize language, power, and ideology. The union of all three – in the first centralization priority – is the liturgy. Unsurprisingly, importing cantors from Rome and trying to get them to teach the chants to their Frankish counterparts through rote memorization wasn't very successful, hence the first notations.

Fast forward past several centuries of chorales and madrigals you've probably never heard (and very likely never will hear, unless you're a masochistic fan of not very harmonically, melodically, or even textually exciting early music) to 1607, when the Duke of Mantua orders his court composer to make a favola in musica – fairytale in music – lavishly glorifying the Ducal family. The subject is Orfeo, based on the Greek myth about the power of music. Thus is born the first true opera. There had been fairytales in music in the prior centuries, involving singing, dancing, and speaking. Monteverdi isn't inventing anything fundamentally new, he is just combining the existing elements with sophistication, good taste, and, well, genius. To put it somewhat crudely, this is the earliest opera that is still being performed. The reason not being its age or subject matter – there's an older fairytale in music by Jacopo Peri based on Orpheus's story – but simply because

Lisa Likhacheva, 23,

is doing an MSc in Biochemistry and spends some of her free time – and much of her lab time – exposing people to the joys of Mozart and Mahler (and Schubert), sometimes against their will.

it is genuinely good and pleasant to listen to.

The Original Hollywood

The tradition of opulent court operas continues. Many are financed through morally dubious means: levying oppressive taxes, using proceeds from slave trade. Then, in 1643, opera is reborn with *L'incoronazione di Poppea*, once again to the intrepid Monteverdi. The first opera house in the world opens in Venice. From a genre slightly suffocated by ideological constraints emerges the 17th century equivalent of Hollywood: an industry aiming to sell tickets, and therefore, to please the public, now its primary financial benefactor.

In *Poppea*, the same things sell as in the 21st century: there's juicy interpersonal drama (the Roman Emperor Nero torn between his wife and mistress), there's sex (music so clearly suggestive with its rhythmic and melodic imitations that even the most modest of stage directors can do very little to procure fig leaves), and there are moral gray zones. In contrast to the moralizing of *Orfeo* – virtue and patience will get you places – the message regarding family values of an opera entitled the coronation of *Poppea*, the mistress, isn't hard to decipher.

Opera-as-entertainment becomes a booming business in Italy. By the end of the 17th century, Naples has a population of 200'000. There's widespread poverty. Orphanages – entitled *conservatori* – abound. The children are raised with state money, which the state is then quite eager to recover by assuring the children's professional placement. And what better way to ensure the children are able to gain a solid living than to have them enter the lucrative opera business? With incessant demand for new operas and an endless supply of singers, the opera industrial complex runs beautifully. A Naples season consists of several works, all of them with runs of 20-30 performances. But these aren't the performances with dimmed lights and reverent silence we're used to today. The audience members – some aristocracy, some professional – reportedly “sat (or roamed) in a continuously well-lit auditorium”, while nobility “arriv[ed] with servants who cooked whole meals, talked, played at cards, and relieved themselves in the antechambers that stood in back of each lavish box”. People would know the librettos (repeatedly set to music by different composers) by heart, hear the same work several times, and generally

come to see and be seen. Hence the requirements for «good» opera: good as background music, a familiar story, and some show-stopping numbers to distract the people from the socializing and the enjoyment of meals. For this, one needs virtuoso stars, who were in abundant supply, able to awe the audience with fireworks of coloratura cadenzas they often improvised on the spot. The composers usually didn't even bother writing out the cadenzas; that could almost be an insult to the singer. In fact, the singers ran the show, with the librettists manufacturing plausible enough narratives with a sufficient number of vocal highlights. The composer was at the very bottom of the hierarchy.

Absolute Power Bores Absolutely

And then there's France, where Louis XIV, and his court composer Lully (probably the first – and likely one of the very few – composers to die of an occupational hazard! His conducting stick pierced his foot, gangrene developed, and he never recovered), and Lully's successor Rameau exert an absolutist hold on the musical conscience of their compatriots. As music historian Richard Taruskin aptly jokes, Lully could just as happily say, “*la musique, c'est moi*”, as Louis XIV was able to say about the state. No opera anywhere in France could be staged without express state approval. And the opera that is being written and staged (monopolized by Lully and then Rameau) is an expansion of elaborate court rituals. It is sung in contemporary dress, features the same dances as those seen in the ballroom, comes with a clear moral message, might be an allegory of the latest gossip about the king's personal life, and musically maximally avoids interfering with dramatic declamation. There are no virtuosos, nor can there be. As a contemporary observer notes, “everyone wants to shine [in the latest Lully production], and there is no way to shine in this work”. When a singer attempts to distinguish herself ever so slightly by adding unwritten embellishments, they are very much frowned upon.

Unsurprisingly, after the run of the first few Italian operas in Paris, with their virtuosic cadenzas and hummable melodies, Jean-Jacques Rousseau quipped that this had been a “blow from which French opera never really recovered”. Rameau's operas do still exist, they even get staged. But next time you admire their excellent soporific properties, recall that these are the consequences of the operas merely ac-

complishing what was expected within the realm of the genre, nothing more. Thank God for the musical influence of Italy's turbulent history – and for the Italian censors' lack of interest in policing harmony and melody.

Entertainment, Enlightenment, Revolution!

French opera never did recover. It adapted, morphing into a monstrous enterprise with stage effects, lighting, and costume designers – doing everything to appeal to the (ticket-buying) bourgeoisie. The first grand opera to be outfitted with all this was *La Muette de Portici*. Behold the consequences of the shift. Two years after its (state-sponsored!) Paris première, *La Muette* is included in a Brussels festival celebrating the 15th anniversary of King William I's reign. The subject matter seems quite safely removed from any present-day concerns: an uprising against Spanish rule in Naples in 1647. Of course, part of it was convenience and opportune timing, but it is an undeniable historical fact that the explosion of enthusiasm during the aria “*amour sacré de la patrie*” (“sacred love of the homeland”) bubbled over and out into the street, with the operagoers joining the crowds that started the Belgian Revolution, which ended up culminating in the establishment of a separate state of Belgium.

Fossilized with a beating heart

So, what you see (and hear!) at the Opernhaus isn't – and never was – a dead art form stuck in a distant irrelevant past. It is popular entertainment with a social and political agenda, which also happens to have attracted the attention of most brilliant musical minds. Lully bores us as much today as it would have the average contemporary French courtier. A lot of Rossini or Donizetti is indeed much better as a lovely musical background you can fast-forward through, rather than the primary highlight occupying all your attention. But in between the fillers and beyond the agenda, we also get some marvels: The condensed brilliance of Rossini's overtures you can't stop humming; Bellini's vocal fireworks that talent and training take to thrilling heights; Puccini's colors that really do move you into the Wild West, Japan, or Christmastime Paris; and the pure musical, vocal, dramatic wonder of Mozart.



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Zwischen A und B

Während ich diese Zeilen schreibe, sitze ich auf meinem Nachhauseweg im Zug. In dieser Zwischenphase, diesem In-between von Uni und Zuhause, überlege ich mir, wohin meine Sitznachbarin wohl geht. Kommt sie von der Arbeit? Nimmt sie jeden Tag diesen Zug? Schaut sie gerade auf meinen Bildschirm und liest diese Zeilen? Woran denkt sie gerade?

Als Person, die viel pendelt, gehen diese und weitere Fragen mir routinemässig durch den Kopf. So versuche ich mich zu unterhalten, wenn ich in diesem zeitlosen Intervall bin und ich nicht gerade ein Buch in der Hand oder meinen Laptop vor mir habe. Denn genau das sind diese Momente: Zeitlos. Der Mensch verschwendet nie viele Gedanken an diese Übergangsphase von A nach B. Sie wird nur als notwendiger Zwischenzustand verstanden, als Mittel zum Zweck. Ich glaube, dass sie viel mehr ist als das. Dass in diesen Momenten, wo wir von einem Ort zum anderen reisen, eine Gesellschaft für sich entsteht.

Der Routinier

Wenn du jeden Tag den gleichen Zug/Bus/Tram zur Arbeit oder Uni nimmst, dann ist es sehr wahrscheinlich, dass andere Personen das ebenso tun. So ist

Sevim Kahya, 23, B.Sc. Biochemie

Nimmt sich jedes Mal vor, keine weiteren Bücher zu kaufen, um ihre 103 Ungelesenen zu lesen, scheitert aber immerzu kläglich an diesem Vorgehen.

es unweigerlich, dass du diese Menschen jeden Tag siehst, vor allem, wenn sie an der gleichen Stelle wie du einsteigen. Da der Mensch ein Gewohnheitstier ist, ist diese Routine nicht wunderlich. Es ist wie eine geheime Abmachung, dass man sich jeden Tag sieht. Falls sich eine Person nicht an diese Abmachung hält, ist man fast schon besorgt. Wo ist sie? Verschlafen? Krank? Ferien? Was fällt ihr ein, dich in so einer Ungewissheit zu lassen?! Am nächsten Tag legt sich die Beunruhigung dann wieder, wenn man die Person wieder sieht.

Die Dynamik

Die Atmosphäre in einem Zugabteil an einem Montagmorgen ist zum Beispiel bei Weitem nicht die gleiche wie an einem Donnerstagabend. Sie sind so verschieden wie Tag und Nacht.

Während morgens der Geruch von Kaffee die stillen Zugabteile füllt, muss man abends die Lautstärke der Kopfhörer erhöhen, um die Gespräche zu übertönen, und man riecht zunehmend das Abendessen «zum Mitnehmen» einiger Passagiere. Die Stimmung ist zudem lockerer. Nachts ist man dann schon behutsamer unterwegs, beim überschaubar (mit merkwürdigen Menschen) gefüllten Zug.

Der Blutalkohol trägt seinerseits nicht unwesentlich zur Dynamik bei. In Hinblick auf die ganze Woche gilt grundsätzlich: Je weiter die Woche voranschreitet, desto höher wird die Wahrscheinlichkeit, dass zwei fremde Personen ins Gespräch kommen. Diese Wahrscheinlichkeitskurve kann in den meisten Fällen als äquivalent zur Kurve des Alkoholpegels angesehen werden.

Nicht-fremde Fremde

Man kommt beim Pendeln mit Menschen in Kontakt, die man sonst gar nicht bemerken, geschweige denn mit ihnen ins Gespräch kommen würde.

Somit offenbaren sich dir die Gewohnheiten anderer Menschen, wenn du nur genau hinsiehst: das Mädchen, das am Fenster sitzt und geistesabwesend mit den Haaren spielt. Der Mann im Anzug, der jeden Morgen sein Milchgetränk im Thermobecher (ungelogen) 30 Sekunden lang schüttelt. Der junge Mann, der vor dir sein Abendessen isst und dabei automatisch den Mais aussortiert. Das ungeduldige Herumfummeln am Riemen des Rucksacks des älteren Herrn neben dir.

Manchmal kommt es gar zu einer Interaktion. Meist passiert das ganz subtil. Ein kurzer, zufälliger Blickkontakt, der zu einem Lächeln führt. Oder gar zu einem Flirt. Der geteilte genervte Blick, wenn ein Baby schreit. Das Schmunzeln, das man über den Monolog einer betrunkenen Person austauscht. Das unbeholfene Lächeln für einen Bruchteil einer Sekunde, was so viel bedeutet wie: «Ich kenne dich nicht und muss deshalb nicht mit dir reden aber ich sehe dich jeden Tag und deshalb wünsche ich dir einen schönen Tag», das man einander zuwirft, wenn eine/r aussteigt.

Sobald du an der Endstation angekommen bist und somit dieses Dazwischensein beendet ist, endet auch der ganze Zauber. Für den Moment ist es ein Abschied. Glücklicherweise hat man immerhin die Gewissheit, dass sich am nächsten Tag erneut die Möglichkeit bietet, dieser geheimen Gesellschaft beizutreten und sich auf diese mitnehmen zu lassen.



Cultural Calendar

The Kulturstelle gives you access to the best of culture Zurich has to offer – and at student-friendly prices. The pre-Christmas spirit is very much in the air. Want to add classical music to an evening of mulled wine and first Christmas lights? Curious about an evening at the theater? Looking for (glamorous) date ideas? Interested in meeting new people who like Brecht, Beethoven, and/or ballet as much as you do? Or just spend an evening with friends? The Kulturstelle has got it all planned for you. Book your ticket at:

www.kulturstelle.ch/en/events/

*Thursday, 7 December, 19.30, Tonhalle.
Kulturstelle Tickets at 15 Fr.*

MAREK JANOWSKI CONDUCTS BRAHMS AND SCHUMANN

Marek Janowski – noted for his fresh Brahms interpretations – will conduct Brahms's spectacular *Tragic Overture*, and the (rarely performed) Double Concerto. The "double" in the title doesn't refer to two pianos, but something even more exceedingly rare: a violin and a cello. The Brahms delights are followed by the Fourth Symphony by Schumann – Brahms's mentor (and husband of Clara, with whom Brahms was very much in love).

www.tonhalle-orchester.ch/en/concerts/kalender/marek-janowski-mit-brahms-1747314/

Friday, 15 December 19.30, Opernhaus. Kulturstelle Tickets at 25 Fr.

RAMEAU'S PLATÉE CONDUCTED BY EMMANUELLE HAÏM. NEW PRODUCTION!

Jean-Philippe Rameau turns 340 this year. And Emmanuelle Haïm – an acclaimed early-music specialist (and, among other things, a Chevalier of the Legion of Honor) – collaborates with stage director Jetske Mijnsen on a new production of an exceedingly rare thing – a French baroque comic opera! *Platée*, a water nymph, sung by a tenor, is convinced that everyone—including the almighty Jupiter – is in love with her. Jupiter shows up as a donkey, then an owl, then finally as himself, and does declare his love. If only *Platée* heeded the lovely, coloratura-rich warnings of Folly and were a little more careful about trusting Jupiter's words! In the best opera traditions, disguises, hiding, malicious plots, and some (very musical) moralizing at the very end follow.

www.opernhaus.ch/en/spielplan/calender/

**Tuesday, 2 January 14.00, Opernhaus.
Kulturstelle Tickets at 25 Fr.**

WALKWAYS, A MIXTURE OF THREE BALLETS: INFRA, SNOWBLIND, AND GLASS PIECES. PREMIÈRE!

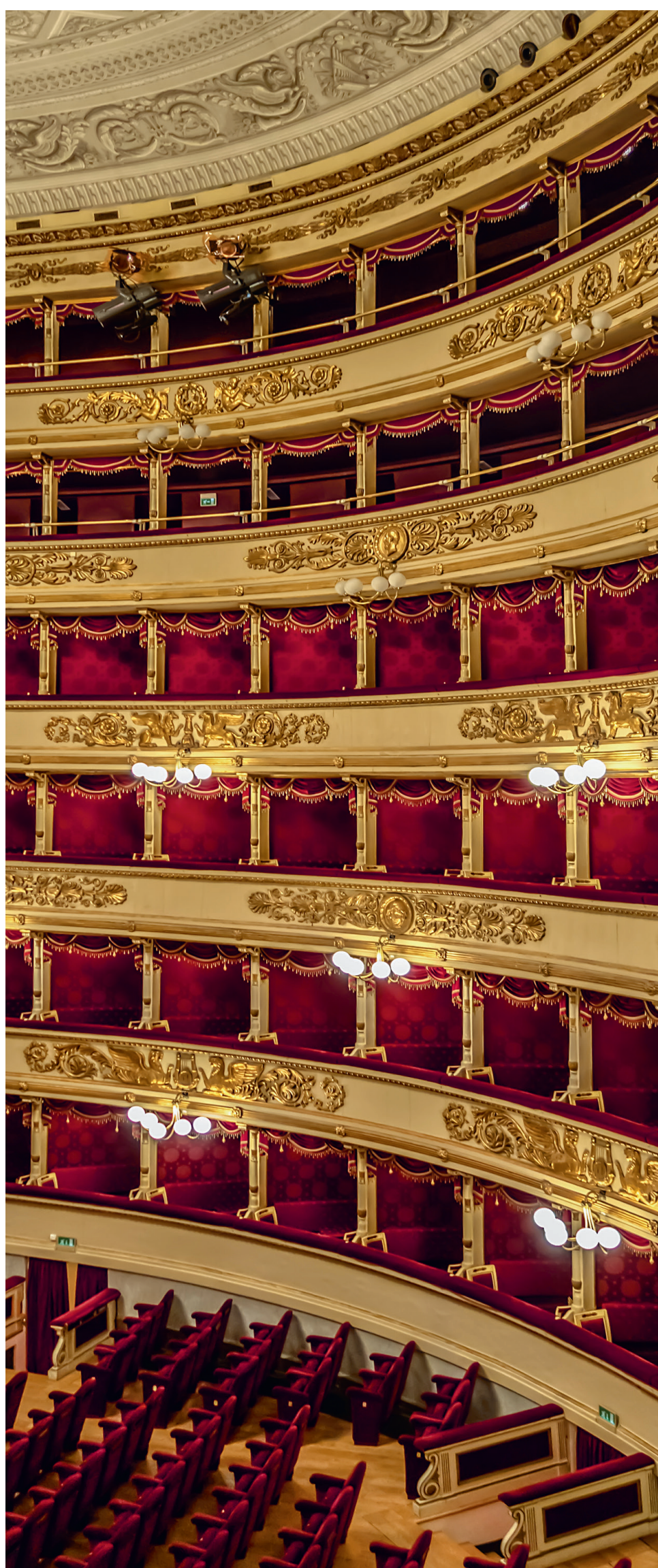
The 2023/24 season marked the beginning of Carthy Marston's term as new director of the Ballett Zürich. *Walkways* is her first première. *Infra*, an abstract ballet choreographed by Wayne McGregor (Resident Choreographer of The Royal Ballet and one of the more celebrated choreographers alive) to Max Richter's music, aims to portray "life beneath the surface of the city". Cathy Marston's own *Snowblind* — based on an Edith Wharton novel, and featuring music by Arvo Pärt, Amy Beach, and Arthur Foote — immerses you in fiery passion in the midst of a frigid Massachusetts winter. *Glass Pieces* features music by (who could have thought?) Philip Glass and choreography by the legendary Jerome Robbins (the man behind *West Side Story*, *Fiddler on the Roof*, *The King and I*, and a recipient of two Academy Awards). Don't miss the last chance to see the most talked-about (and that mostly with admiration!) ballet production of the season!

**Thursday, 7 December, 19.30, Opernhaus.
Kulturstelle Tickets at 25 Fr.**

AN ART SONG BEST-OF WITH SIMON KEENLYSIDE

Simon Keenlyside, one of the most renowned baritones in today's opera world, brings a sparkling mixture of well-known and interesting-to-discover art songs to Zurich. You might have heard Schubert's *Ständchen* and Brahms's *Nachtigallen* schwingen before, but very likely not Schumann's *Ballade des Harfners* or Debussy's *Voici que le printemps*. If only the two Schumann/Brahms highlights — see also the Double Concerto/Fourth Symphony at the Tonhalle — weren't happening on the same day!

www.opernhaus.ch/en/spielplan/calendar/liederabend-simon-keenlyside/



Settling

Gaurav Singh

One day I'll have my ducks in a row
My room will be clean, the laundry done
I will even have that assignment finished
Before half-past one

My sleep schedule will respect this time zone
I might even go for an early morning run
It may be a bit hard to believe, but
People tell me they can be fun

I'll quit doom scrolling
My screen time will be down to nil
I'll resist Zuck's cheap dopamine
Through sheer power of will

I'll read that book about molecular habits –
Or was it atomic tendencies?
Either way, I'll go beyond fiction and fantasy,
Maybe develop a taste for Kant and Socrates

I'll reach the pinnacle of multilingualism
And never break my Duolingo streak
Perhaps I'll learn to read Rumi in Farsi
And Homer in Ancient Greek

You might say I'm chasing the unattainable,
but
Each day I am slightly more than who I've been
I'd say halfway to an ideal is not half bad
So, I'll settle for something in-between



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Wochenendrebellen

Fast hätte unser Autor übersehen, dass der Film «Wochenendrebellen» im Moment über die Zürcher Kinoleinwände flimmert. Einzig dank der Einladung seiner Mutter, die beim Schauen des Films unbedingt einen echten Fussballfan dabei haben wollte, kam er in den Genuss.

«Wochenendrebellen» begleitet eine entscheidende Phase in der Schulzeit des autistischen Jungen Jason. Autismus umfasst ein ganzes Spektrum verschiedener Ausprägungen und Beeinträchtigungen, die nicht bei allen Betroffenen vorhanden sein müssen. Für Jason bedeutet es beispielsweise, dass er sehr empfindlich auf Veränderungen oder laute Geräusche reagiert. Das macht besonders die Interaktion mit den anderen Kindern seiner Schulklasse zu einer riesigen Belastung. Provokationen und Probleme führen fast zum Schulausschluss des an sich intelligenten Jungen.

Richtlinien für Vereinsuche

Als er von seinen Klassenkameraden nach seinem Lieblingsfussballverein gefragt wird, lässt ihm das Thema keine Ruhe mehr. Eine weitere Ausprägung von Jasons Autismus ist nämlich, dass er den Zwang verspürt, sich an genaue, selbst auferlegte Regeln halten zu müssen. So stellt er auch Richtlinien für die Wahl seines Lieblingsvereins auf: Er darf kein peinliches Maskottchen haben, die Spieler dürfen keine Spielerkreise bilden und sollen möglichst nicht verschiedenfarbige Schuhe tragen. Der Verein darf keine Nazis im Stadion tolerieren und muss ökologisch nachhaltigen Kriterien folgen. Bald wird Jason klar: Er muss sie sehen! Alle 56 Vereine aus der ersten, zweiten und dritten deutschen Bundesliga! Und zwar im Stadion! Sein Vater Mirco, selbst ein Fussballfan, schlägt ihm einen Deal vor: Sie reisen zu zweit an den Wochenenden zu Fussballspielen und dafür verspricht der Junge, sich in der Schule nicht mehr provozieren zu lassen. Abgemacht!

Krieg im Kopf

«Papsi, wir sind die Wochenendrebellen», sagt Jason zu seinem Vater, wenn sie von Stadion zu Stadion reisen. Als Publikum sind wir bei den Fahrten der beiden da-

bei und merken schnell, dass ein Stadionbesuch mit Security-Checks, Menschenmassen und Bierduschen für einen hochsensiblen Jungen eine denkbar schwierige Aufgabe ist. Trotzdem bleibt Jason standhaft und macht wertvolle Erfahrungen. Die Vater-Sohn-Beziehung entwickelt sich unter teilweise komplizierten Umständen. Immer wieder wird uns vermittelt, wie die Welt aus Jasons Blickwinkel aussieht. Warum Krieg in seinem Kopf entsteht, wenn sich Nudeln und Sosse auf dem Teller berühren oder wie schwierig es ist, tausend ungefilterte Eindrücke gleichzeitig verarbeiten zu müssen. Wir leiden mit ihm mit, bewundern die Hingabe und Fürsorglichkeit seiner Eltern, aber ertappen uns auch hin und wieder dabei, wie wir das Unverständnis der aussenstehenden Personen nachvollziehen können. Dies ist ein Dilemma zwischen persönlicher Eigenart und gesellschaftlichen Zwängen, das bei Weitem nicht nur Autisten kennen und nur mit radikaler Offenheit aller Beteiligten zu lösen ist.

109 Minuten

Das dazu nötige Verständnis vermittelt dieser Film definitiv. Von manch einer Person mit Autismus wird der Film als sehr realitätsnah gelobt. Auch der

echte Jason – der Film basiert auf einer wahren Geschichte – erzählt im Fussballpodcast «Rasenfunk», dass ihm die im Film dargestellte Aussensicht auf sein eigenes Leben geholfen habe, sich selbst besser zu verstehen. Ein viel grösseres Kompliment bezüglich Authentizität kann man einem Film kaum machen. Mich haben natürlich besonders die Stadion-Szenen in den Bann gezogen. Deswegen empfehle ich euch: Nehmt euch 109 Minuten Zeit, schnappt euch eine fussballbegeisterte Person und schaut die «Wochenendrebellen». Mir hat's gefallen. Meiner Mutter übrigens auch.

Lukas Heckendorn, 25,

MSc interdisziplinäre Naturwissenschaften, leidet schwer unter der Krise seines Lieblingsvereins, dem FC Basel, und versucht deswegen, sich durch das Studium vom Fussball abzulenken.



THE SLEEPING MAN

YEAR 2031 - CRYOTECH HEADQUARTERS:

The Cryotech headquarters were in great agitation. Hundreds of workers rushed through the building, in a frenzy. None of them wanted to be responsible for the slightest mistake concerning the big event of the next day. The CEO was directing the entire operation from the main hall, where the eight cryogenic capsules were about to be installed. Everything seemed to be going as planned, and he was already dreaming about turning those eight into hundreds. But everything would depend on the success of the big event. His daydreams were interrupted by the sudden entrance of his deputy, followed by the load of capsules. "Oh, you are finally here!", he welcomed the deputy with a satisfied smile printed on his face. She approached him quickly, without responding to the greeting; and he whispered anxiously: "I deeply apologize, director. A minor issue may have arisen...".

The CEO's expression instantly changed, and his voice turned to a strange mixture of anger and fear.

Alberto Spalvieri, M.Sc. Physics, always enjoys well-told stories regardless of the medium.

"What do you mean by "minor issue", Andrea? Don't tell me you lost one of the clients!?", he said, nervously counting the capsules that were being transported inside the room.

"Quite the opposite, sir. I am afraid we have an extra one."

And indeed, there were nine crates sitting on the marble floor.

"How is this possible?" The director was feeling slightly relieved. "All this setup was arranged for eight! Eight cryogenically preserved big names, with eight dedicated stations, each with the associated honorary plaque!" The deputy remained quiet. She knew she couldn't reply until her boss had finished his outburst. "So, now you tell me. Who the hell is this one?!" He finally breathed again. Now that the fear was gone, only the anger remained.

"His name is Todd McGuffin, 53 years old. He was a florist in Northampton, England. Suddenly passed away due to a heart attack", she read from the data sheet of the man. They approached Todd's capsule, which had just been unpacked. Andrea pressed a button and a blue light revealed the middle-aged man who

was floating in the cryogenic fluid. He was short and frail; his sunken face completely hairless – just like the rest of his body (as required by the cryonics protocol) – and displayed a vacant and vaguely dull expression. The director looked at him for a couple of seconds, then turned back to his deputy without changing his tone:

"And why is he here now?"

"Do you remember the contest held as part of the advertising campaign?"

"Do you refer to the one you told me was nothing really concrete?"

"Well, yes. When we imposed the requirements we supposed that an incident like this was very improbable, but..."

"Listen to me, Andrea. I spent tons of time and money organizing all this. The other eight clients we held are very powerful people and, more importantly, their families are our biggest investors. A delay could cost me everything, especially if what causes it is this —", he looked around quickly and then lowered his voice, "this useless douchebag. Do you understand?"

"Yes, of course. And as a matter of fact I might have a solution that needs your approval." For the first time, she showed a bit of confidence. "Go ahead." The CEO started to calm down.

"You see, when we held the contest, I thought we might have some legal complications with the winner's family after his death. For this reason, I decided to add a clause, so that at the moment of the subscription, the participant agreed to keep his win a secret, at our discretion."

"Do you mean that no one knows he is here?"

"Exactly! He had his funeral and everything. As far as the family knows his body is buried in some remote graveyard." The director was now completely back in his previous good mood.

"Ah, great! Very well done, Andrea! I knew I could rely on you." He shouted while giving the woman a pat on the back. "I don't see any problem then. Just put him in some closet and let's forget all about this. Now, we have some more important work to do for tomorrow's big event!"

**YEAR 2123 -
CRYOTECH HEADQUARTERS:**

The abandoned building, illuminated by the full moon, cast an eerie shadow on the two kids who were approaching the entrance. They were two brothers: Carl, 13 years old, and Andy, 16. Having arrived in front of the main door, they hesitated for an instant looking at each other: "Are you sure you want to go in?», said Carl. "If you are so scared, you can always go back home...", Andy taunted him. Carl thought a little bit about it. "C'mon! You were the one who insisted so much, with your eccentric antique obsession", Andy pressed him again. "Alright, let's go." Carl tried to appear confident in front of his older brother. "And do not call them antiques! They are evidence of the past!" "Yeah, yeah, whatever...". Andy lifted the tape that was blocking the entrance and sneaked in, followed by Carl. "Those kinds of hobbies are not well seen by the AWG authorities. You wouldn't want to end up under surveillance like me, would ya?" Andy had always been a rebellious kid, and the AWG (Artificial World Government) educational system had quickly identified him as a possible threat to The Program.

Since humankind had fully relied on AI to fix the catastrophic energy crisis about 90 years before, society had changed massively. No more borders, only a centralized world government held by artificial intelligence, which guaranteed a perfect political balance and obviously prevented dangerous power aspirations. All people spoke the same language, created ad hoc for the purpose; and all of them had to follow the guide of The Feed, a complex algorithm which provided news, laws to respect, choices to take, lifestyles to follow, and essentially allowed the AWG to control the world population and execute The Program. That was the main goal and concern of the AI, which could be summarized as "Making life on Earth the best it can be" – even if some freedom had to be sacrificed.

A kid who refused to follow The Feed and left home for days without any tracking was considered dangerous for the correct flow of The Program and would eventually be punished. Andy knew this perfectly well, and for this same reason he was in this building that night.

"What is this place?", asked Carl with a slight shiver. The building was completely dark and everything was

covered in a thick layer of dust. Andy activated his flashlight and started to look around. "It was some kind of old company. I think it was something about information preservation."

They began to walk through the multiple empty rooms. "Obviously AWG dismantled it all. You know, removing the memory of the previous time is one of the main points of The Program."

"What a pity", murmured Carl. "But maybe we can find some ancient tech?" The joy finally came back to his voice.

"Yes, but don't be so excited. They are useless. Except for earning a few bucks, obviously."

"Still, it would be amazing to see some, maybe the kind they used back in the time of Gramp's stories about his parents."

"Those stories were probably just some crazy ramblings of an old man. But he was right about one thing: I can't stand this constant control anymore." Suddenly Andy's eyes lit up with determination. "It is probably too late to turn back now; people forget fast and the last ones like Gramps will disappear sooner than later, anyway. I just want to have the chance to be free as long as I can! That is the last thing left for us to do...". They remained in silence while they crossed the final corridor that would lead them to the main hall. Finally, Carl broke the silence again: "What are we searching for?", he asked. "I don't really know precisely. Some fancy object in good condition maybe, there should be some in here. Collectors pay huge sums for that kind of crap, especially now that such finds are becoming so rare." "And then?", continued Carl.

"Then what?"

"After you get the money?"

"If it's a great sum, and I hope it will be, maybe...", a satisfied smile spreads across Andy's face. "Perhaps I'll go to some faraway island. I don't really care as long as I can be free and away from those inspectors."

Carl was not a stupid kid. He already knew that his brother wanted to leave the country, but said out loud, it was an unpleasant thing to hear. He quickly looked away and went quiet. But Andy wasn't finished yet: "And maybe,

if you help me find something good to sell, I can even think of bringing you along." That was all daydreaming, but for Carl, it was enough to bring back his excitement. They finally entered the huge main hall. It was an incredible sight. Eight human-size containers were arranged in a perfect circle at the center of the room. They obviously were some kind of forgotten technology! Andy immediately ran to get a closer look. The titanium base was free of rust, and the glass on the top was partially covered in mold, probably due to the long exposure to moisture. Andy noticed some kind of information sheet attached to one of the sides of the container, but it was written in some incomprehensible language. He tried to push some of the buttons next to it, but nothing happened; obviously, the AWG had deactivated them too. While Andy was trying to figure out a way to get something sellable out of the things, Carl's voice came from one of the backdoors:

"Hey, bro! Quick, come here!"

He reached him inside a small room, and there it was. Another of those things, which this time emitted a bright blue light. "How can it be? He slipped away from the AWG?". The rest of the room was filled with all sorts of pieces of old crap. "Andy, look! There's a man inside!" And, in fact, there was! The silhouette of a human figure was vaguely projected by the blue light through the thick layer of dust covering the glass. It was the last man who knew the world before!

That instant of revelation was instantly interrupted by a loud noise. The sirens of the inspectors jolted the main room and a metallic voice started repeating: "Andy Graham, you are requested to surrender without putting up any resistance". There was nowhere for Andy to hide now, and he knew that.

"Carl, stay completely silent and wait", he whispered. Then he ran to the exit of the small closet they were in. "Please, don't go!" Carl silently cried. "Remember, be free 'til the end!", said Andy and then closed the door behind him. After a couple of minutes, all was quiet once again. They had taken him away once and for all this time. Carl cried, while the blue figure of the sleeping man loomed over him.

Ask Your Professor

Have you ever wondered what your professors are like outside the classroom? Or perhaps you've had burning questions about life, relationships, career advice, or the experiences that shaped them into the educators they are today? Welcome to „Ask Your Professor: Beyond Academics,“ a new segment in our magazine that allows students to ask professors any question that goes beyond the boundaries of academia!



Prof. Dr. Klaus Eyer is an assistant professor in the department of chemistry (D-CHAB) at ETH Zürich. He is a member of the Institute of Pharmaceutical Sciences where he leads the Functional Immune Repertoire Analysis group. With an interdisciplinary background in B cell immunology, microfluidics, vaccination and single-cell analysis, Prof. Eyer's group focusses on the functional analysis of individual cells to apply it to identifying personalized treatment strategies in systemic autoimmune diseases and cancer. An ETH alum, he obtained his master's degree in pharmaceutical sciences followed by a PhD in bioanalytical chemistry. Students at D-CHAB describe Prof. Eyer as charismatic, witty, and kind.



Prof. Eyer on top of the world

What unexpected passion or interest do you have outside of your field that has influenced your perspective on life?

Cooking, and I guess changing my perspective on life, cooking for someone. It is nice to prepare food for other and enjoy it with them. Cooking helps me take a step back, reflect on the day and important things, and allows me to be creative.

If you could be a virus, which one would you be and why does it characterize you the best?

Interesting question – usually, I try not to emulate viruses. As a pharmacist by training, you always try to prevent or treat a viral infection. Nevertheless, to give you one example that I consider to be remarkable: I was fascinated by the ability of the measles virus to re-program the immune system and take over the immunological memory, leading to so-called immune amnesia. However, hopefully, there is not much in common – I hope my lectures build upon, expand and connect knowledge, rather than replace it.

What do you wish every student would know before starting their studies at ETH?

I think every student is aware that the studies will be challenging, motivating, exciting, sometimes overwhelming, and maybe even frightening, at times, if you think about the future. I think it is important to realize that one is not alone with such feelings and that there is much support around – the VSETH helpdesk, for example. I often think some students wait too long to ask for help, whether among friends, colleagues, the helpline, or other sources. At least, that was something I had to learn – asking for and accepting help.

What was the most embarrassing moment you've ever experienced as a professor?

Hmm, a few things come to mind, but one that I like: I co-teach a class for chemistry students where we walk around the desks to help students with their exercises. I have – not once, and not even twice – fallen over bags when running from one raised hand to the next one. I seem to forget that

there are obstacles. However, we usually have a good laugh about it when it happens, so that helps.

Is there something you would really like to do but cannot because of your position as a professor?

Sleep during my classes (laughs)? No, seriously, putting the phone and emails away for a prolonged time would be nice. I have not yet given up; I am still trying to learn in and find mechanisms to do it.

Submit your questions for the next instalment of the Ask Your Professor column on the Polykum website, <https://polykum.ch/>. And check out the next issue to see whether your question made it!

P.S. Our form is completely anonymous, so we won't know who you are. The Polykum board will go through the questions, pick those we think are most interesting, and ask the professor to answer them!

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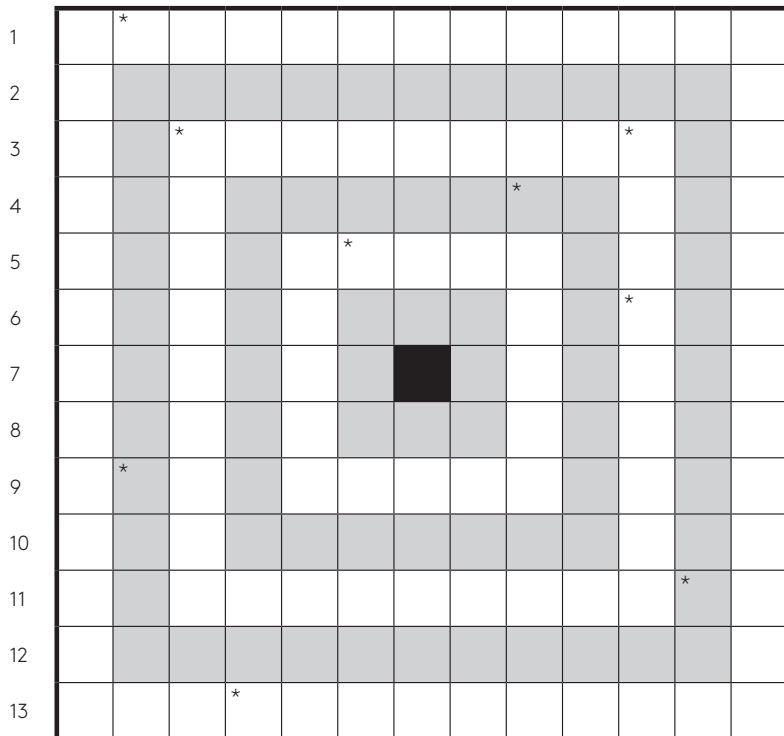
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Es gilt: $i = j = y$ **KRUXEREI**

Ein neuer Fall von den drei Sonderzeichen

von &, ∞ und # (Rätsel, Bilder und Text)

Erklärung

Trage die unter «Zeilen» definierten Wörter waagrecht hintereinander in die entsprechenden Zeilen ein. Das Schema besteht zudem aus 6 konzentrischen Rahmen, welche im Uhrzeigersinn gelesen, ebenfalls Wörter beinhalten. Diese umlaufenden Wörter sind unter «Umlaufend» in korrekter Reihenfolge, aber ohne Angabe des Startpunktes, definiert.

Lösungswort:

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(Felder mit Stern waagrecht fortlaufend)

Zeilen (Waagrecht)

- Sternchen platziert | oder spioniert.
- Klingt wie Zitrus, form wie Gipfel | am westlichen Zipfel.
- Semesterprüfungs-Tücke: Lohnt sich der zur Lücke?
- Wer arbeitet dort rund-umd-Uhr, hä? |
Saccharomyces cerevisiae!
- So der Franzos' | zu Mädchen auf seiner Schoss.
- Beim Denkversager | Hohlraumlager.
- Autor | der malochte im Labor.
- Von der Gruft | an die Luft.
- Ruf dies, falls "Trix" | bewirkte nix.
- Diamant- | Quant.
- Maler platziert hat | ein Feigenblatt.
- Ersetzen Robbenjagd | bald durch Roggensaar?
- Korrektes Durchnummerieren | wird sie generieren.
- Für währschaft Pinke-Pinke | baut er 's Häusle bis zur Klinkle.
- Chemiker hat den Plausch | an ihrem Austausch.
- Worin kippt Luzern | ihren Güssel gern?
- Botanisch ist's glaub | 'ne Alpenrose ohne Laub.
- Dame ist erste Hälfte | bei Toskana und Lombardei.
- Kuchen-kipp-Malheur | deklariert als Feature.
- Vokallose | Caramelcrème aus Plastikdose.
- Zahnarzttermin schreibst kaum hinein |
ist sie versteckt oder geheim.
- Hebt deine gebrochenen Knochen | nach Pisten-blochen.
- Physis | von Charybdis.
- Fast-Food-Dinger | geben Saucenfinger.
- Äquatorial- | normal.
- Disst und hält Rekord | für Song mit meisten Wort.
- Ob physisch, ob mental | Für Bewegung zentral.
- Wer ins Käseregal schaut | sieht eine rote Haut.
- Pack sie in den Moon-Boot rein | ist etwas zu kurz dein Bein.
- Wenn einem im Internet | das Lautrauslachen vergeht.
- Sith-Figur in Jedi-Geschicht' | mit hässlichem Gesicht.
- In seinem Schrank? | Puppe, Pentagramm und Trank.

Umlaufend (Uhrzeigersinn)**1. Rahmen (aussen)**

- 1001 Nacht? | China-Handel leicht gemacht.
- Musst schmeicheln 'nem Briten? | Kannst ihn so betiteln.
- Mentale Barriere | zu Smalltalk-Karriere.
- Wenn Fischers Fisch | Grösser als tatsächlich isch.
- Ob stationär, ob mobil | geeignet für manches Spiel.
- Verstoss gegen Gesetz | im Netz?

2. Rahmen

- Warten gmütlich Waffen | während AdAs paffen.
- Die Zylinder | speichern Futter für Rinder.
- Ignorant | oder tolerant.
- Urin- | Origin.
- Blatt | das Rotzlöffel auf Titel hat.
- Die Feier ist Usus | und folgt auf Exitus.
- Zum Beispiel für Fass | welch Blatt auf Blatt für Jass.

3. Rahmen

- Liibli | für Phoebe.
- So startet, ist doch klar | ein solides Formular.
- Managua-Umland | Mit Typo, unser Schand...
- Scharf, brennt im Auge, oft rot | ist aber keine Schot'.
- Damit SMS an U-Boot Sende | Polykum-Comic-Legende.

4. Rahmen

- Als erste aller Wauwau | ging sie richtig hoch hinaus.
- Krach | drehend mach.
- Im ersten Buchstaben, ungefähr | oder was die Turner ohne diesen wär.
- So der Jaques | Chefposten betiteln mag.
- Sie sind | in Nantes.

5. Rahmen

- So wird Schaman | zu Regenbringermann.
- "Etz bisch doo", | sang Status Quo.
- 2 Punkt, Stift, Lineal | Pisa ist's egal.
- Sprachen-Default | wie gern Atom Elektronen holt.

6. Rahmen (innen)

- gab's nicht schon mal die Definition? | Budget der Nation.
- Ziemlich am Anfang | wo Menschen und Schlang'.

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