

The Optimist

A journal to help you survive the valley of shit



June 2020 EDITION



EDITORIAL

Not long ago, we found ourselves at the pub the Optimist asking ourselves: why the hell did we ever decide to pursue a career in science? A few drinks in, we realized that we would not be doing relevant science if it was easy. Moreover, in any other job we would probably be bored. To be able to survive our PhD – in a healthy mental condition – we realized we had to change our mindset. We need to learn how to deal with failure, how to be patient and how to create a healthy work-life balance. In order to bring optimism back for ourselves and our fellow PhD students, we came up with the idea for this interactive journal by PhD students for PhD students. Our goal is to become healthy scientists that are hardworking but relaxed, ambitious but sharing, and confident but humble. We are convinced that the best way to achieve this is by sharing our struggles and by seeing the humor in it. But that is not enough. We believe the efficiency of science can be improved. The scientific method has proven very successful over the last decades. Nothing we write down here will change this. However, we would like to step away from the idea that the current way of doing science is the only way and encourage constructive discussions. Therefore, in every edition we will focus on a topic that merits some thought.

The optimist team,

Matthias, Donya and Joni & Hava Izci

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Competition in Science

The adverse effects on resource sharing, research integrity and creativity

If we removed the politics, the competition and the greed from science, would we have a cure (or be closer to finding a cure) for the diseases we are studying? Do we NEED this COMPETITION in order to achieve great results?

If yes, then this is alarmingly worrying. I do not argue that a little healthy competition is a bad thing and some of it is outside our control, but is there really a need to compete in the way we do now? I am referring to both competition within labs and in the research community. There has never been as many academics as there are now, which is great. Though this comes hand in hand with more competition. Perhaps you sometimes feel like you are swimming in an overcrowded pool, racing to have the highest impact factor paper, not to be mistaken with the most impactful paper.

How did this happen?

1. Something we all know well, the “priority rule” is the award we give for **being the first** in our discoveries (1).

This has been around for as long as science has existed. If you managed to discover something first, you were awarded. In fact, most of us need this unique discovery, however small, summarized in a manuscript in order to graduate. Being second in academic findings is dubbed as essentially being last (unfortunately!).

It is difficult to keep paranoia levels low when so many people around the world are trying to answer the exact same question. At the same time producing a culture of caution has well documented effects on the wellbeing of students, both external pressure of being scooped and the internal pressures within labs and the institute (2).

2. We need this competition for **survival** in our career

Whilst some of us are natural competition junkies before entering our PhD, some of us develop this mechanism as a means to survive in the field.

Competition can surely cloud critical thinking

We must remember that resisting this competition is for the greater good of science. Competition, just like our previous article on publication pressure (Optimist 1st Edition) can surely cloud critical thinking and even creativity because one's motivations change. If we get caught up in these webs we become distracted and start the cycle of worry. In fight/flight mode your brain is not at a deeper level of understanding (3).

3. Time pressure

Yes, there are just a handful of permanent positions in academia, the bottleneck is tight, but conforming will lead us further away from the reason we set out on our quest. It is true that we are expected to work in teams, and yet we are individually graded. It is true that grants don't care much for "kindness" or "teamwork", you could just list it as a skill on your CV/LinkedIn without anyone checking the reality. Let's make it important. Pressure to publish (within a certain time frame) can indeed even lead to unethical behaviour as we discussed in previous Optimist Editions.

This is where competition becomes a true problem. The value of research you do here in the time you have, the people you meet along the way, and your moral obligation to science is the bigger picture. We are all in this together, find some comfort in that. It is also okay to accept that due to the natural laws of science and life sometimes some projects just don't work! Some people will be assigned to a project that just sometimes luckily works out but luck can only take you so far. We should acknowledge that we have limited time but we should not try and race against the clock.

4. A system that does not praise good leadership and teamwork

Do we grant more value to becoming the first to discover something sexy, no matter the cost it took to get there? What about innovation, collaboration and mentoring? Where possible, senior scientists should be judged on how well they train and motivate junior staff. This is more beneficial than just submitting a list of publications and a paragraph on potential scientific outreach which may or may not be followed up on. I think we can move towards a system which rewards for excellent mentorship and open science. We can always do better to raise the bar we currently accept and settle for in scientists.



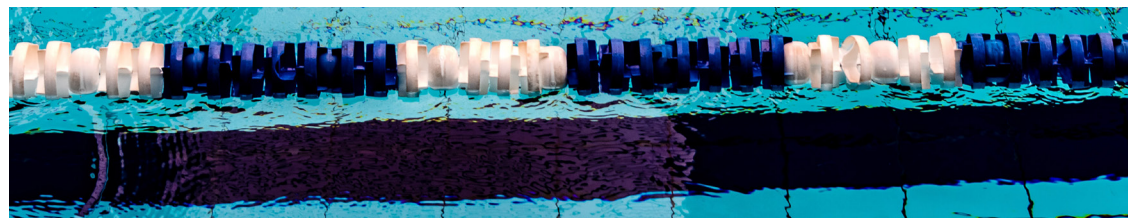
What are the consequences?

In most jobs one could argue that it is natural to have some form of competition, between colleagues in the field or in a company. However, our profession is not like most jobs. As PhD students we stand in the crossroads of student and worker. For sure the system is not perfect and we constantly hear about these pressures driving us to the edge. It is not our salary, because it is one of the best for PhD students in Europe and it is not job prospects because we have an extremely high employment success rate. In this issue we look at competition as a possible flaw that may make you feel lonely on this solo **expedition**.

In team-based labs for example in pharmaceutical companies, this teamwork is fundamental and subsequently the success is shared evenly. In academia, your success can be shared and thanked with colleagues over a toast "sante" but that is usually the maximum. In academia there is always one main author and the victory is more or less theirs. In team-based jobs this is simply not the case. If there was a fair slice of cake for everyone we would potentially do things differently.

So, why does this matter? What competition affects most is **creativity**. If we are conducting research for papers and to please reviewers, this impedes creativity. This creativity is the most valuable and unique driver in academia, therefore it would be a shame to fuel discovery with competition rather than creativity. If we informally or formally ask/interview those who left academia what they miss most about academia? They reply -creativity. Some of the best inventions were sparked upon curiosity, leaving the mind to wander. This is a luxury we cannot deny we hold. Given the right environment, focus and a sprinkle of good mentorship and you got yourself the perfect recipe for bright ideas.

Let's stimulate that frontal cortex! This is not a myth, a study found that using functional near-infrared spectroscopy (fNIRS)-based hyperscanning that cooperation tasks led to more signalling in the brain region than competition motivated tasks (4).





What can you do?

We need to preserve as much of that young naïve drive to success, with as much kindness as we can, for our colleagues, competitors and greater network should share one common interest – establishing the truth in our hypotheses. For example, if you attend a conference and there is a talk on your colleagues' topic, then inform them. Your university paid for you to attend this conference, give a little back to science and share information (if allowed) to forward science. Next time you come across a "competitor" **brainstorm** with them, help each other so long that it is a symbiotic relationship, these relationships are essential to hacking the PhD and most importantly the research question.

Have you ever been in a lab meeting and listened/partook in back and forth discussions which has enlightened your thinking? That is the power of brainstorming. As you make that journey in your head to connect the dots, whilst looking distantly ahead dazed, you may be amazed at how much you have learnt in just those five minutes of concentrated debating. I owe most of what I have learnt through these collaborations within my lab and outside.

Be transparent, if we hide our issues, put our head down and/or pursue a selfish journey, we will isolate ourselves and the community. As we all have within us certain strengths and weaknesses and different outlooks we can use each other to our advantage. Urge for changes in systems, for example a new grant application system from the Wellcome Trust UK requires applications to publish proposals regardless of the success.

This means if your grant is rejected, you can collaborate with your competitor on the topic instead (5). Taxpayers should not be paying multiple research groups for the same research. In addition to this, the trust also encourages students to publish in its own journal WellcomeOpenResearch (6).

Competition for sure brings about positive features too, such as fear of correction through a competitor driving better research (8) but we must be aware of the dark side of COMPETITION.

So much attention now is focused on obtaining "high impact" papers, unfortunately measured by publication in a very limited set of journals. A great paper can make a splash and influence the work of other scientists (an important mark of success). However, that high profile paper might be largely forgotten after a few years. Friendships in science, however, can easily last years and often a lifetime. Scientists who understand this and have nurtured these interactions have received a valuable "prize". They are well-connected and valued by other individuals in the scientific community. This prize is accessible to many scientists, junior and senior, provided that they are mindful of the value of people and not just papers.

Professor Ronal Vale

Donya Pakravan

Edited by Joni Vanneste and Matthias Koch

DOING A PHD IN THE STONE AGE



Prof. Lynette Lim has joined the CBD recently from London as a new group leader. Her research is primarily focused on GABAergic cortical neurons and how these different nerve cells emerge and mature during development. The Lim lab studies the metabolic and transcriptomic programmes that shape neuronal diversity and circuit assembly in the developing mammalian cortex. They are located on the 6th floor.

How would you describe your experience during your PhD?

My PhD was a period that I really had time to waste – at least for the first 3.5 years (It took me 5 years). I realised this is not the case anymore for a lot of PhD students, with the rise of mental health issues. At least back in 2007, my cohort of newly admitted PhD students had time and freedom. My flat-mates were two PhD students in theoretical physics that seemed to have even more time than I did – they never left the house before 1 pm... We were dancing salsa 3 times a week till 1-2 am. I was in a more general biology program so the PhD community was also very diverse. What I love the most was pure intellectual freedom and curiosity. I really didn't feel the pressure that I had to chase whatever impact factor journal paper or my career would be over. Being naïve about the system helps to some extent. I thought a lot about biology and had almost philosophical discussions with my lab-mates on a regular basis.

I must say, we were not the most focused PhD students compared to what I see now at VIB – far from it. The most motivating factor for me was the freedom to think and to come up with the questions and experiments that I wanted. And this freedom as a PhD student was the main deciding factor for me to make a career in science. Of course, there were many demotivating factors. While my PI had given me (and most students in the lab) this freedom, it came with very high responsibilities. You had to do everything yourself – from applying for the animal licenses to publishing your paper. I had to put together the whole manuscript for publication, wrote the cover letter, and even acted as co-corresponding author. In some sense, I felt that I did my postdoc first, and then my PhD.

“The most motivating factor was the freedom to think

When the rejections came for that paper (and there were many), it was very hard to find the courage and persistency to go on, to find another journal, to argue with the reviewers and editors, not to mention the solitude you feel. I can only say that the freedom I felt far outweighed the struggles with rejections.

Are there things you are specifically proud of, or things that you would approach differently in hindsight?

It's crazy these days to talk about a good pair of hands – but I was one of those PhD students and postdocs that were lucky enough to have this skill. I could get various protocols to work without too much struggles. Additionally, I could also very quickly improve on existing protocols from the lab – mainly to simplify them. These experimental traits really helped me do experiments that most people can't do. However, I think I also wasted a lot of time on the bench because I liked playing with these protocols. This was often deviating from my main project. In short, I could have been more focused in hindsight. I think this is where my postdoctoral mentor was very good. He always directed me back to the main project goals (not without some conflicts).

Which advice(s) or tips would you give us PhDs?

I think science, like art and music, are “luxury” careers. We are scientist because this is how we can best express ourselves

and how we make sense of the world.

There are no real hard deadlines and there is no immediate “return”. Therefore, your PhD is the start of a life-time race with yourself. In that sense, you are laying down the foundations for your personal reputation as a scientist, and I do not mean in the CV sense. Basically, we all know deep down who we need to go to if we need help to get an experiment to work – it is not always the person with the most Nature or Science papers. To me, you need to love the core of science: designing a beautiful experiment and getting a conclusive answer. And if you have this, no number of paper or grant rejections can take the joy of science away from you. If you don't have this, no number of Nature papers or grant can give it meaning. I am not saying that the CV is not important. The publications, grants, awards, etc – those are just a means to an end. They let you progress in the career and keep letting you do the experiments that you want. If you lose track of this core too early and chase the superficial instead, then there is only emptiness at the end of the path.



“Science, like art and music are “luxury” careers

Is there life after a PhD?

In this section, we interview former PhD students about the value of their PhD and which career moves they made later on



Julie Nys was until last year working as a postdoc in the laboratory of Joris de Wit. Afterwards, she started to work at Byteflies. A short overview of her career:

- PhD, cross-modal plasticity in the mouse visual cortex
- **2013**
Postdoc, KU Leuven – University of Montreal
- **2015**
Postdoc, role of the autism-linked protein neuroligin-3 in synapse development, “Laboratory of Prof. Joris de Wit – VIB”
- **2019**
Medical Scientist and Product Owner in Byteflies
What? Byteflies is a Medtech startup that provides B2B-services to enable lean development of wearable health applications.
Their goal? To break out of the hospital and bring user-friendly medical devices to your home.

What did you enjoy the most during your PhD?

Communicating about my research and getting inspired by talking to experts in the field (and scientific heroes :-)) at international conferences. I always got a boost of enthusiasm when connecting with new people during networking events and when pushed to think outside the box when they criticized or commented on my work.

Which skills did you learn during your PhD that proved useful later on?

Analytical thinking, presentation and communication skills, perseverance, scientific writing, and the importance of having good connections. **Being proactive to find your own solutions and ideas** were valuable lessons that benefited my career development.

How does a normal day look like at your current job?

Every day is different but **teamwork** is definitely a key ingredient and that is what I love. We constantly discuss how to translate innovation into value for the patient, for pharma, and for medical specialists with the path of least resistance and maximum impact. As a startup, you have the agility to do so. This speed is really exciting and the small team size forces you to learn many aspects of the business and go beyond your expertise. As a product owner, I am a representative of the team to the outside world. You need to talk and listen to all stakeholders and make sure the team perfectly knows

what to prioritize and which new features need to be implemented. I love to be this glue between external and internal teams.

My day often entails **checking data** and results from measuring brain activity (EEG), heart and muscle (ECG, EMG) activity and motion on patients in the hospital or at home. We **discuss** these data **together** with KOLs (**key opinion leaders**), which are mainly neurologists as my team is focused on epilepsy. The input from patients and health care professionals is very important to guide you towards the best solution. Therefore, I often need to **communicate this feedback internally** to the hardware/software engineers and use this input in **strategic decision making**.

Additionally, there is some **project management** for several projects including a large multicenter epilepsy academic trial, which we are running together with UCB, 7 European hospitals and other private partners.

Traveling and **training** several researchers and health care professionals is also a significant part of the job. Pitching and giving presentations about our progress, strategy, potential and next steps are some additional tasks of my job that I like the most. I have the honor to work with humble, talented sharks so every day I also learn new things and get to be inspired.

How did you come in contact with your current job and which steps did you take to get the job?

Being part of Joris's lab was worth it every day, as you all know it is a superstar team :-). I was grateful to do research in this ambitious environment and be part of the VIB community. Hence, I was not actively looking for a career change, although I did feel **I wanted to engage my soft skills and empathy more in my job**. I followed the VIB career guidance course to better define what I really wanted to do and if academia would be my number one career path given my personality and skill set.

Shortly after, the husband of my master thesis supervisor, who I stayed in touch with, reached out to me. He is the co-founder and CEO of Byteflies and he openly talked about a position he believed was tailor-made for me. And he was right :-)! The same day, I met the CMO, who is an Associate Professor at Cleveland University and was in Leuven at that time. Since he had a more similar background and trajectory, it was useful to get his perspective on working in a startup and health tech.

After meeting the full team, I enjoyed being amongst these inspiring entrepreneurs, engineers, data scientists, business developers and operational leads.

My decision to join was also linked to timing: Byteflies was very successful, focusing on brain diseases and taking the next steps to scale up, which is a critical phase for a startup. Although it sounds risky, I immediately felt a match and an exceptional opportunity to learn and have an impact on society. **I followed my gut feeling**, talked to many friends and family, **and went for it**.

I was lucky to be approached, so it wasn't a typical job hunting experience with rounds of applications and interviews. My advice would be to **define your inner drive, always keep an eye open for interesting opportunities and don't underestimate the value of your network**.

Before you left academia, you continued for several years as a post doc. Do you see these years as an advantage or do you regret not leaving earlier?

I don't regret not leaving earlier. Of course, I still need to learn a lot, but that is part of every curious person that likes a job with recurring challenges regardless of industry or academia. **I don't think more experience in industry would have necessarily made me better at my job today than my experience in academia**.

I excelled in my professional and personal development thanks to two postdocs in different institutes and countries, joining the de Wit lab and engaging in the VIB community.

I could leverage on excellent scientists and colleagues to bring my work to a higher level and amplify my network. As a postdoc, you gain more experience in writing grants, supervising students, and managing multiple projects at the same time. This is very valuable to any type of job within and beyond academia.

During my few months' research collaboration abroad at the University of Montreal, I studied complex brain circuitry in cats and gained experience in intrinsic brain imaging, but most importantly, I truly appreciated the power of a multidisciplinary team.

From your personal experience, what are the positive sides of academia and what are the positive sides of working in the industry?

For academia:

- **Creating new knowledge**, even if the application is not clear yet.
- **Freedom** to discover and get excited by the intricate workings of biological processes, wherever this may lead you and be able to follow your interest.

For industry (startup level):

- The **speed of working**, the flexibility and outside the box thinking.
- Focus on more **efficient** time allocation and **teamwork**.
- Make use of soft skills and use the power of motivation.
- Have a **direct impact** on patients/society.

How to be visible on the internet?

It can be overwhelming sometimes to think about your career after your PhD. Where will I be? Will I continue in research? Will I work in my current research field? You will probably grow and evolve as a researcher and so will your research field. It helps to grow your online presence as a researcher as this gets increasingly important in this day and age for future collaborators. In order to ensure that you and your work is correctly represented online, a few tools can be handy for you:

Make a unique identifier

Current or new collaborations and colleagues might be interested in your work. ORCID ID is a unique identifier that links all of your work (publications, datasets, software, patents, experiments, etc.) to your unique ID, to make it easier for people to find you. You can quickly and easily register to make an identifier for you to use and distinguish yourself from every other researcher. You can **link** this ORCID ID to your **CV, public profiles, e-mail signature** and mention it on research publications or applications for grants.

Networking with LinkedIn

Another tool to advance your career and profession is LinkedIn. Here are a few tips to keep your LinkedIn-profile up-to-date:

- Don't be afraid to **promote yourself** or brag about your work. This is not the place to be modest.
- Complete your profile: i.e., make sure to use a profile picture where your eyes are visible, write a short personal description or "**elevator pitch**" and set up a personal URL for your profile.
- Add as much skills, courses, presentations and publications that you gathered during your PhD as you like.
- A PhD counts **both** as **work experience** and as an **education** on your profile.
- When connecting to people that you met at conferences, try to send a note together with your request to connect.
- You can **search people** that work in specific companies or you can search alumni at your current institute to **check out where they are now** to get some idea for direction.

News you may have missed

We all know how depressing reading the news can get, especially if you are already having a tough time at work. But do not despair! We've navigated through all that negativity to come up with a selection of articles that are guaranteed to lift your

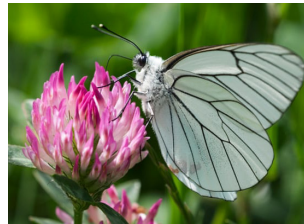


Europe is getting off coal even faster than expected

April officially marked the closure of the last coal plants in Sweden and Austria. Sweden's closure came ahead of schedule by a whole 2 years and many other EU countries, including France, the UK and Italy are estimated to follow the trend in the next few years. The switch to more renewable energy sources is slowly but steadily happening across the continent as set out at the Paris climate Agreement and is hoped to be complete by 2030.

EU pledges to raise €20bn a year to boost biodiversity

The European Commission has unveiled a new 10-year plan to consolidate the ambitions for better protection of all the local natural resources at risk of exploitation. As part of the European Green Deal, the Commission listed several commitments, including the reduction in use of chemical pesticides by 50%, the strict recognition of about a third of the land as 'protected areas' and the promotion of local biodiversity by means of planting 3 billion trees.



Commercial whaling may be over in Iceland

Commercial whaling has been put to a halt in Iceland, one of the three main countries where this practice is still in use. For the second year in a row, the two biggest Icelandic companies announced that no whaling ships would leave the docks this summer following a decision that may turn to be permanent. The two other major countries, Norway and Japan, have experienced a steady reduction in their activity over the past few years, which can be attributed to a lack of demand and

Preparation time: 35 mins | Serves: 3

Ingredients

Sauce:

- 236 ml coconut milk
- 118 ml vegetable broth
- 5 g Sugar
- 1g Salt (best is grainy seasalt)
- 1 g red pepper flakes

Stir-Fry:

- 3 garlic cloves, minced
- 3 scallions, sliced (synonym: *spring onions*)
- 15 g grated gingerroot
- 15 ml Water
- 10 g/ml curry powder/curry paste
- 45 ml vegetable oil (like soybean or rapeseed oil)
- 400 g extra firm tofu (dry tofu with tissue paper, cut then into cubes/slices, anything in bite-size will do)
- 1 large red onion (either small cubes, or bite-size pieces)
- 1 red bell pepper (cut into ca. 1 cm slices)
- 2 carrots (cut into ca. 2 cm slices)
- 340 g snow peas (both is fine!)



Preparation

Sauce:

Whisk together all the sauce ingredients

Stir-fry:

- Combine garlic, scallions, ginger, water, curry and 15 ml of the oil and put it to the side for now.
- Toss tofu with salt and pepper to taste. Heat 15 ml of the oil in a wok or in your non-stick skillet over high heat (this is an asian cooking technique that requires the high heat and oil to "fry" the ingredients). Add tofu and cook until the tofu turns lightly brown on its different sides, then put the tofu aside in a bowl.
- Add last 15 ml of oil, bring it to high heat, then add carrots, onion and red bell pepper. Wait until the vegetables soften up a bit (2-3 minutes)
- Add the peas, clear a space in the middle of the skillet and add the garlic mixture into the middle, leave it cooking for like 30 seconds and then combine garlic mixture and vegetable and continue cooking for a bit.
- Add the tofu back to the skillet and add now the sauce, Toss everything together until you have a nice and even mix. Season it to your liking. You can make it as hot as you like!
- Serve with jasmine rice, or any rice you like. Some bread like naan would also work!

Enjoy your meal!

Fun things to do besides your PhD

Special at home edition

For travel fans

- **Around the world dinners**

Organize an evening or dinner at home around the theme of a country example: Mexico with nachos, home-made tacos and margaritas

- **Visit a museum virtually**

Visit the MoMA (Museum of Modern Arts in New York) and many others virtually (for free): <https://artsandculture.google.com/partner>



For self-improvement

- **Learn a new language**

Free apps like Duolingo are great to also prepare you for your future trip

- **Workout**

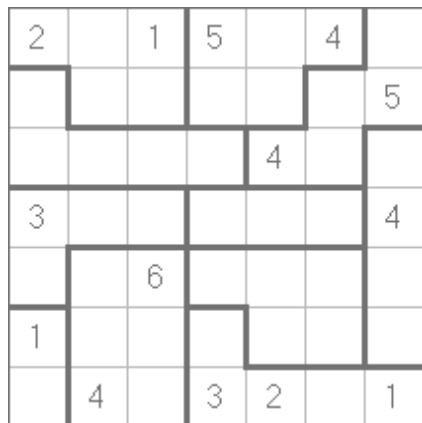
KU Leuven is organizing weekly live workout classes like yoga, Zumba, core stability or boxing fit on Facebook for free (in English) □ Groups: "KU Leuven sport online" or "Uniefactief online" for which PhD students both have access to.

Other hobbies

- **Boardgames**

Wingspan: A game about birds. "Wingspan is a competitive, medium-weight, card-driven, engine-building board game from Stonemaier Games."

Online boardgames to play with your friends or family from distance: www.boardgamearena.com

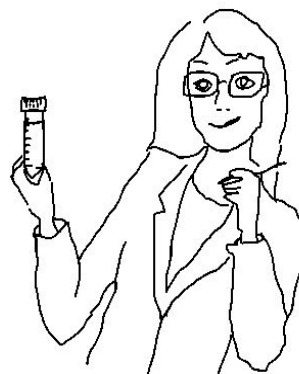


Tectonic or Suguru Puzzle

The rules are simple: A grid contains different regions (outlined in bold) from sizes 1 to 5. Your task is to fill the grid so that each cell contains a number. The only constraint is that the numbers are limited by the size of the region. For regions of size 1 you put only 1, for regions of size 2 you put 1 and 2, then following the same principle. A region of size 5 must be filled by numbers 1,2,3,4 and 5. A cell cannot have the same number than any other neighbouring cell touching it (not even diagonally).

HEY, IT'S OKAY TO...

Science is serious business,
but we may share similar frustrations



...panic you will never graduate and will forever be a PhD student

...Skype for business log in and then go back to snooze

...work the hours you feel are good for you

...feel sad and worried sometimes – this is natural :(

...drink wine during the day

...plan your week around your next Colyru visit

...pick up your Zalando delivery before your zoom call with your boss

...hate your in-laws (because you are staying with them right now)

...feel lonely

...not put on jeans once in the last 2 months

...forget the date, over and over again

...have missed celebrating huge milestones like weddings and graduations (we are all in this together)

...miss your family and friends (shout out to international students !!!)

...reminisce about the "good old days"

...celebrate your birthday in quarantine in front of your laptop

...actually enjoy running now and feel like you've betrayed your old lazy self

...become an ice coffee drinking, tik tok watching, yoga with Adriene watching, athletic leisure ...wearing generation Z even though you are a true millennial through and through

...discover a new side of youtube

...email your input to Optimist.PHD@outlook.com

You have a confession to make?

Mail us at Optimist.PHD@outlook.com

Thank you

Main topic
Donya Pakravan

PI interview
Lynette Lim

Fun things to do
Hava Izci

News you may have missed
Simone Marcigaglia

Chef's corner
Credits to Primordial from Food.com

Hey it's okay
You, for inspiring us

Pictures
Unsplash.com

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Wishes from the optimist team to our readers:

Take care and enjoy the summer & see you back in autumn!



LEUVEN BRAIN INSTITUTE